

EXHIBIT 115
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Exhibit 1

Expert Report of Hal J. Singer, Ph.D.
(August 31, 2017)

FILED UNDER SEAL

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEVADA**

IN RE:)	Case No.: 2:15-cv-01045-RFB-(PAL)
)	
Cung Le, Nathan Quarry, Jon Fitch, Brandon Vera,)	CLASS ACTION
Luis Javier Vazquez, and Kyle Kingsbury,)	
on behalf of themselves and all others similarly)	
situated,)	
)	
Plaintiffs,)	
)	
vs.)	
)	EXPERT REPORT OF
Zuffa, LLC, d/b/a Ultimate Fighting Championship)	
and UFC,)	HAL J. SINGER, PH.D.
)	
Defendant.)	

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INTRODUCTION AND ASSIGNMENT

1. Zuffa LLC, doing business as Ultimate Fighting Championship (“Defendant,” “Zuffa,” or “UFC”), is a promoter of live professional mixed-martial-arts (“MMA”) bouts. Plaintiffs in this case are MMA fighters (“Fighters”), and include Cung Le, Nathan Quarry, Jon Fitch, Brandon Vera, Luis Javier Vazquez, and Kyle Kingsbury.¹ Plaintiffs allege that Defendant implemented an anticompetitive scheme to acquire, maintain, and enhance its monopoly power in

1. I interviewed named plaintiffs Cung Le, Nate Quarry, and Javier Vazquez on May 23, 2017. On June 2, 2017, I interviewed named plaintiffs Jon Fitch and Kyle Kingsbury.

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the market for promoting professional MMA bouts (the “Relevant Output Market”), and its monopsony power over the Fighters appearing in those bouts (the “Relevant Input Market”).² I have measured the Relevant Input Market using two industry-accepted databases: (1) MMA Fighters who are tracked by FightMetrics (the “Tracked” Relevant Input Market); and (2) MMA Fighters who are ranked by FightMatrix (the “Ranked” Relevant Input Market). I also have defined a relevant input submarket consisting of all Fighters ranked one through fifteen in any of the major MMA weight classes (the “Relevant Input Submarket,” or “Headliners”), using industry-accepted databases for ranking MMA Fighters.

2. Plaintiffs allege that Zuffa’s anticompetitive scheme has foreclosed potential rival MMA promoters and impaired their ability to compete with Zuffa in the promotion of professional live MMA Events (“Live MMA Events”). Specifically, Zuffa is alleged to have: (1) eliminated potential rival MMA promoters through horizontal acquisitions; (2) deprived potential rivals of key inputs (the Fighters themselves) by entering into allegedly exclusionary contracts with the vast majority of top Fighters; and, (3) taken other steps to use its alleged dominance to impair potential rivals.³ Plaintiffs allege that these actions, taken together (the “Challenged Conduct”), have enabled Zuffa to harm competition in the Relevant Output and Input Markets,⁴ thereby maintaining and enhancing Zuffa’s monopoly and monopsony power, causing anticompetitive effects, and resulting in antitrust injury to Plaintiffs and members of the two classes defined below.⁵

2. United States District Court District of Nevada, *Cung Le, et al. v. Zuffa, LLC, d/b/a Ultimate Fighting Championship and UFC*, 2:15-cv-01045-RFB-(PAL), Consolidated and Amended Antitrust Class Action Complaint (Dec. 18, 2015) [hereafter, CAC].

3. *Id.* ¶1; Part VII.A.

4. *Id.* Part VII.B.

5. *Id.* Parts VII.C-VII.D.

3. Plaintiffs have defined a “Bout Class” as:

All persons who competed in one or more live professional UFC-promoted MMA bouts taking place or broadcast in the United States during the Class Period. The Bout Class excludes all persons who are not residents or citizens of the United States unless the UFC paid such persons for competing in a bout fought in the United States.⁶

Plaintiffs have defined the “Identity Class” as:

Each and every UFC Fighter whose Identity was expropriated or exploited by the UFC, including in UFC Licensed Merchandise and/or UFC Promotional Materials, during the Class Period in the United States.⁷

Plaintiffs define the “Identity of a UFC Fighter” as “the name, sobriquet [nickname], voice, persona, signature, likeness and/or biographical information of a UFC Fighter.”⁸ Plaintiffs have defined the “Class Period” as beginning December 16, 2010, and continuing until the Challenged Conduct ceases.⁹ Plaintiffs claim that through the Challenged Conduct, Zuffa has injured members

6. *Id.* ¶39. I have been instructed by Class Counsel to interpret the phrase “a bout fought in the United States,” as used in the Bout Class definition, to mean any fight taking place within the United States or broadcast live (with or without a tape delay) into the United States. Given that all of the bouts in the data I am using to assess foreclosure, impact, and damages either took place within the United States or were broadcast live in the United States (albeit some with slight tape delay), I did not need to exclude any fighter from the Bout Class, nor did I need to remove data reflecting any potential non-qualifying bouts in assessing impact or damages. If, however, the class definition were interpreted to be limited only to those class members who fought in a bout that physically took place within the United States during the Class Period (regardless of whether or not it was broadcast live into the United States), 12.7 percent of the Bout Class members would be excluded (154 out of 1,214 Fighters). These 154 Fighters account for 1.5 percent of the aggregate Bout Class damages. Additionally, 33.1 percent of all Bout Class damages are associated with bouts fought outside the United States (but which were broadcast live into the United States).

7. *Id.* ¶47. Consistent with the definition of the Bout Class, I limit my analysis to Fighters participating in one or more Zuffa Live MMA Events broadcast in the United States during the Class Period. This includes numbered UFC pay-per-view events (for example, “UFC 196: McGregor vs. Diaz,”) as well as non-pay-per-view UFC events (for example, “FOX 7: Henderson vs. Melendez”). Events are considered live if broadcast either in real time or with a tape delay for events held in foreign time zones. (For example, UFC 138, held in the United Kingdom, was tape delayed for US audiences. See <http://www.mmaweekly.com/ufc-138-tv-ratings-match-past-tape-delays>). I do not include taped bouts from The Ultimate Fighter (“TUF”), Zuffa’s reality-TV show; however, TUF finales, which are live, are included (for example, “TUF 21 Finale: Thompson vs. Ellenberger”). Finally, Live MMA Events by acquired promoters (such as Strikeforce), in which Fighters received compensation from Zuffa, are also included. See ZFL-2603701

8. CAC ¶27.

9. *Id.* I understand Plaintiffs claim that the Challenged Conduct is ongoing.

of the Bout and Identity Classes by compensating them for bouts and Identity rights, respectively, below levels that would have prevailed in the absence of the Challenged Conduct.¹⁰

4. I have been asked by counsel for Plaintiffs to determine whether Zuffa possessed monopoly or monopsony power (or both), and, to the extent necessary or helpful to make such determinations, to define one or more relevant antitrust markets (along both product and geographic dimensions) for assessing the claims in this case. I have also been asked to assess whether the Challenged Conduct foreclosed competition and generated anticompetitive effects. I have also been asked to determine whether the Challenged Conduct: (1) caused members of each Class to be compensated below levels that would have prevailed in the absence of the Challenged Conduct; and (2) caused injury in the form of under-compensation that was widespread across members of each Class (that is, to assess whether the Challenged Conduct generated a “common impact” on each Class). Next, I have been asked to calculate the aggregate amount of undercompensation to members of each Class attributable to the Challenged Conduct. I was also asked to review and assess potential procompetitive justifications for the Challenged Conduct that Zuffa, or economists acting on its behalf, have asserted in other fora, including in proceedings before the Federal Trade Commission (FTC). Finally, for each prong of my analysis, I was asked to determine whether addressing it would involve methods and/or evidence common to Class Members (as opposed to evidence or methods that would vary from one Class Member to another).

10. *Id.* ¶21. I estimate that, as of June 30, 2017, there are 1,214 Fighters in the Bout Class and at least as many Fighters in the Identity Class. As explained in Part V, *infra*, my analysis of the Identity Class focuses on two subgroups. The first of these subgroups consists of Fighters who received positive, nonzero compensation from Zuffa in exchange for use of their Identities during the Class Period. There are at least 826 Fighters in this first subgroup. The second subgroup consists of Fighters who executed a Promotional and Ancillary Rights Agreement with Zuffa during the Class Period. There are at least 791 Fighters in this subgroup. There is substantial overlap between these two subgroups. Approximately 64 percent of the members of the first subgroup are also members of the second subgroup, and approximately 67 percent of the members of the second subgroup are also members of the first subgroup.

SUMMARY OF CONCLUSIONS

5. My conclusions in this report are based on the information available to me at this time. I reserve the right to supplement my opinions in the event that new evidence becomes available.

- Economists recognize that exclusionary conduct, such as the Challenged Conduct here, has the potential to harm competition. Whether the Challenged Conduct is actually anticompetitive here depends on: (1) whether Zuffa has enjoyed significant market power; and (2) whether the Challenged Conduct has allowed Zuffa to exercise its market power to foreclose or impair competition to a significant degree. I conclude that Zuffa enjoyed substantial market power, and exercised that power to substantially foreclose and harm competition.
- Zuffa has had significant monopoly and monopsony power at least since the beginning of, and extending throughout, the Class Period, and is widely recognized as the dominant promoter of professional Live MMA Events.
- At least since the beginning of, and extending throughout, the Class Period, Zuffa's Fighters have accounted for a large share in the Relevant Input Market (under both of my measurements) and Relevant Input Submarket, indicating Zuffa's monopsony (buying) power. Zuffa has also accounted for a large and dominant share in the Relevant Output Market at least since the beginning of, and extending throughout, the Class Period, indicating its monopoly (selling) power. Rival MMA promoters face substantial barriers to entry and expansion in the Relevant Output Market, due in part to the Challenged Conduct, including Zuffa's staggered, long-term exclusive contracts with Fighters. At least since the beginning of, and extending throughout, the Class Period, Zuffa has had no close competitors in the Relevant Output Market or in the Relevant Input Market or Submarket.
- In addition to this indirect evidence, there is ample direct evidence of Zuffa's significant monopoly and monopsony power. This includes direct evidence of suppressed Fighter compensation, pricing power over Live MMA Events, restricted demand for Fighter services, restricted supply of Live MMA Events, and the exclusion and impairment of potential rivals.
- The Challenged Conduct fits within the standard economic framework of Raising Rivals' Costs ("RRC").¹¹ Under the RRC framework, a dominant firm engages in

11. Steven C. Salop, *The Raising Rivals' Cost Foreclosure Paradigm, Conditional Pricing Practices and the Flawed Incremental Price-Cost Test*, 81(2) ANTITRUST L.J. 371-421, 376 (2017) ("The RRC foreclosure paradigm generally describes exclusionary conduct that totally or partially 'forecloses' competitors from access either to critical

exclusionary conduct that “totally or partially ‘forecloses’ competitors from access...to critical inputs.”¹² As a consequence, firms that would otherwise provide competitive discipline are unable to do so, allowing the dominant firm to exercise market power, resulting in anticompetitive harm.¹³

- Access to a broad stable of MMA Fighters from the Relevant Input Market and Submarket is a critical input necessary to stage successful Live MMA Events in the Relevant Output Market. The Challenged Conduct ensured that Zuffa’s would-be rivals lacked access to this critical input. Zuffa leveraged its staggered, exclusive contracts with Fighters to make its exclusionary provisions effectively perpetual for Fighters that Zuffa wished to retain.
- At least since the beginning of, and throughout, the Class Period, as a result of the Challenged Conduct, Zuffa foreclosed high shares of the Relevant Input Market (under both measurements) and Submarket, and MMA promoters were unable to compete effectively with Zuffa. Lacking access to a critical input (top MMA Fighters), the Challenged Conduct prevented non-Zuffa MMA promoters from staging successful Live MMA Events that could compete on the level of the UFC, and substantially constrained the ability of other MMA promoters from offering competitive compensation or promising career paths to top MMA Fighters.
- Zuffa’s horizontal acquisitions and the exclusionary effects of the Challenged Conduct were mutually reinforcing. Zuffa’s acquisitions eliminated would-be rivals to which Fighters might otherwise have switched, potentially defeating or at least mitigating Zuffa’s attempts to exercise monopsony power. Zuffa subjected the rosters of Fighters from acquired MMA promoters to Zuffa’s exclusionary contracts, making the acquired Fighters unavailable to non-Zuffa promotions, and enhancing Zuffa’s foreclosure of the Relevant Input Market and Submarket. This further impaired any surviving MMA promoters from competing effectively with Zuffa, and further cemented Zuffa’s status as the only MMA promotion capable of offering a promising career path to a Fighter seeking to challenge other top Fighters.
- Other components of the Challenged Conduct further reinforced these exclusionary effects. These include (1) counter-programming by Zuffa with the intent and effect of preventing other MMA promoters from achieving profitability; (2) agreements with other MMA promoters to impair potential rivals by shutting off access to Fighters; (3) contracts preventing other MMA promoters from using clips of Fighters’ past fights to promote fights involving former UFC Fighters; (4) exclusive contracts with sponsors preventing sponsors from sponsoring non-Zuffa MMA

inputs or customers, with the effect of causing them to raise their prices or reduce their output, thereby allowing the excluding firm to profit by setting a supra-competitive output price, with the effect of harming consumers.”).

12. *Id.*

13. *Id.*

Promotions or Fighters, thus further locking-in Fighters to the UFC by threatening them with losing their third-party sponsorships (and corresponding sponsorship dollars) if they were to leave the UFC; and, (5) contracts requiring venues, sponsors, and broadcasters not do business with other MMA promoters as a condition for doing business with Zuffa.

- The Challenged Conduct has generated substantial anticompetitive effects in the Relevant Input Market and Submarket, and in the Relevant Output Market. These include suppressing compensation to UFC Fighters below competitive levels, restricting the supply of Fighter services in the Relevant Input Market and Submarket, and (relatedly) the supply of Live MMA Events in the Relevant Output Market, and inflating prices to MMA fans and consumers in the Relevant Output Market above competitive levels.
- Documentary and econometric evidence and analyses common to the Class as a whole demonstrates that: (1) Plaintiffs have suffered antitrust injury due to Zuffa's suppression of Fighter compensation below what it would have been in the absence of the Challenged Conduct; and (2) the antitrust injury resulting from the Challenged Conduct in the form of artificially suppressed compensation was universal or nearly so among members of both proposed Classes.
- For the Class Period through June 30, 2017, aggregate damages to the Bout Class are alternatively estimated, depending upon factual underpinnings, at between \$811 million and \$1.6 billion. Aggregate damages to the Identity Class are estimated at \$37.2 million.
- The evidence in the record includes efficiency defenses of the Challenged Conduct that have been proffered by Zuffa in past proceedings, and by economists on behalf of Zuffa. These efficiency defenses include the claims that the Challenged Conduct: (1) increased MMA output; (2) incentivized investments promoting Live MMA Events generally and individual Fighters specifically; and, (3) increased Fighter compensation. The record evidence I have reviewed to date does not support Zuffa's prior claims that any of the Challenged Conduct has had these purported positive effects. To the contrary, the available evidence from the record in this case, from my econometric analysis here, and from other professional sports and the sports economics literature indicates that elimination of the Challenged Conduct would benefit Fighters, consumers, and the MMA industry generally.
- All of my conclusions are based on data, methods, and evidence common to all members of each Class.

6. The remainder of my report is organized as follows: In Part I, I briefly review the MMA industry's background and the related academic literature. In Part II, I review the horizontal and vertical aspects of the Challenged Conduct. In Part III, I show with evidence common to

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members of both Classes that Zuffa possessed significant market power, and I demonstrate with classwide evidence that the Challenged Conduct substantially foreclosed competition and generated anticompetitive effects. In Parts IV and V, I show, using classwide evidence, that the harm flowing from the Challenged Conduct was widespread across members of both proposed Classes and thus can be said to have caused common impact across each Class. In Part VI, I calculate, using classwide evidence and methods, aggregate damages to members of each Class. In Part VII, I review efficiency defenses of the Challenged Conduct that Zuffa has put forth in prior proceedings, and I explain (based on classwide evidence and analyses) why these claims do not undermine my findings.

7. The opinions expressed in this report reflect my review of evidence, data, testimony and other relevant materials to date. I reserve the right to supplement or amend my opinions should new materials or information become available.

QUALIFICATIONS

8. I am a Principal at Economists Incorporated, a Senior Fellow at George Washington University's Institute for Public Policy, and I have served as an Adjunct Professor at Georgetown University's McDonough School of Business (where I have taught Advanced Pricing to MBA candidates).

9. Prior to joining Economists Incorporated, I was a Managing Partner at Navigant Economics, and before that, I was Chief Executive Officer of Empiris, a litigation and regulatory consulting firm (acquired by Navigant in 2010).

10. I am the co-author of the e-book *The Need for Speed* (Brookings Press 2013), and the book *Broadband in Europe* (Springer Press 2005). My articles, several of which pertain to

exclusive dealing,¹⁴ have appeared in dozens of legal and economic journals, as well as economic textbooks.

11. I have testified before Congress on the interplay between antitrust and sector-specific regulation. My scholarship and testimony have been widely cited by courts and regulatory agencies. In agency reports and orders, my writings have been cited by the Federal Communications Commission, the Federal Trade Commission, and the Department of Justice. I served as an economic consultant to the Canadian Competition Bureau in a review of vertical merger in the television industry. My economic practice has been recognized by the American Antitrust Institute, and I have been a frequent speaker and author for ABA Antitrust Section events and publications, respectively.

12. Although my experience spans several industries, I have considerable experience in sports. I served as a testifying expert in three program-carriage cases (adjudicated by an Administrative Law Judge pursuant to section 616 of the Cable Act) on behalf of independent cable sports networks: MASN (the network of the Baltimore Orioles and Washington Nationals), NFL Network, and Tennis Channel. I also served as an expert for the National Football League in the sports-blackout-rule proceeding at the Federal Communications Commission. I have served (and continue to serve) as a valuation expert for the Baltimore Orioles in their ongoing revenue-division dispute with the Washington Nationals, arbitrated by Major League Baseball.

13. I earned M.A. and Ph.D. degrees in economics from the Johns Hopkins University and a B.S. *magna cum laude* in economics from Tulane University.

14. See, e.g., Kevin Caves, Chris Holt & Hal Singer, *Vertical Integration in Multichannel Television Markets: A Study of Regional Sports Networks*, 12(1) REV. NETWORK ECON. (2013); Kevin Caves & Hal Singer, *Assessing Bundled and Share-Based Loyalty Rebates: Application to the Pharmaceutical Industry*, 8(4) J. COMPETITION L. & ECON. (2012); Kevin Caves & Hal Singer, *Analyzing High-Tech Employee: The Dos and Don'ts of Proving (and Disproving) Classwide Antitrust Impact in Wage Suppression Cases*, ANTITRUST SOURCE (2015).

14. My curriculum vitae is provided in Appendix 1. I have no financial stake in the outcome of this case. I am being compensated for my work in this case at the rate of \$695 per hour. A list of the materials upon which I relied in forming my opinions for this report is provided in the Appendix.

I. INDUSTRY BACKGROUND

15. In this section, I provide a brief summary of the MMA industry, the related academic literature, and the forms of compensation that Class Members receive from Zuffa.

A. The MMA Industry

16. MMA is a term for the modern-day, full-contact competitive sport that mimics unarmed combat between two individual Fighters. MMA blends different combat styles, incorporating the most effective striking, wrestling, and disabling maneuvers from other stand-alone martial arts such as boxing, kickboxing, judo, and wrestling, into a single contest of physical supremacy. With its origins in the “no-holds-barred” scoreless competition of fighting until unconsciousness or submission, MMA has since evolved from a spectacle of “human cockfighting”¹⁵ into a popular competitive sport with its own rules and scoring systems.¹⁶

17. Similar in many ways to boxing, modern MMA fights (or “bouts”) between competitors are timed rounds in which opponents attempt to disable their opponents. A bout can be won by either knocking out an opponent via striking the head, or by forcing the opponent to submit (“tap out”) via a wrestling hold or lock that causes extreme pain. In the event neither Fighter has

15. Robert J. Szczerba, *Mixed Martial Arts and the Evolution of John McCain*, FORBES, Apr. 3, 2014, available at <http://www.forbes.com/sites/robertszczerba/2014/04/03/mixed-martial-arts-and-the-evolution-of-john-mccain/#27d42ac91a3b>.

16. Trevor Collier, Andrew L. Johnson & John Ruggiero, *Aggression in Mixed Martial Arts: An Analysis of the Likelihood of Winning a Decision*, in VIOLENCE AND AGGRESSION IN SPORTING CONTESTS: ECONOMICS, HISTORY AND POLICY SPORTS ECONOMICS, MANAGEMENT AND POLICY 4 (R. Todd Jewell, ed. Springer Science + Business Media 2011) [hereafter *Aggression in MMA*].

capitulated by the end of the last round, the winner is determined by a scoring system employed by judges.¹⁷ Today, Fighters are divided into ten major weight classes.¹⁸ The top Fighter of each division is awarded a championship belt. In a title fight, a challenger is matched against the defending champion.¹⁹ In boxing, while independent sanctioning organizations declare champions, boxers can unify a title (becoming an undisputed champion) by simultaneously capturing championships at all major sanctioning organizations.²⁰ In contrast, championships in MMA are promoter specific: The UFC awards championship belts to Fighters within its own organization, and there are no independent sanctioning organizations that declare champions or regulate the rules as to who is declared a champion. To date, the UFC has never cross-promoted a Live MMA Event in conjunction with another MMA promotion.²¹ However, there exist third-party ranking systems, often relied upon by MMA promotions and the MMA press, that rank all MMA Fighters (across different MMA promoters) relative to one another, both within weight classes and on an overall “pound-for-pound” basis.²²

18. State athletic commissions determine rules for Live MMA Events (weight divisions, fouls, equipment, etc.), and sanction each bout of a Live MMA Event individually.²³ Athletic

17. See UFC’s “Ways to Win,” available at <http://www.ufc.com/discover/sport/ways-to-win>.

18. See, e.g., <http://mmajunkie.com/rankings> (showing the *USA Today/MMA Junkie* rankings for ten major weight classes, as well as men’s pound-for-pound rankings; see also UFC’s “Weight Classes,” available at <http://www.ufc.com/discover/sport/weight-classes>. See also <http://bleacherreport.com/articles/2652376-bleacher-report-mma-rankings-for-july-2016>

19. See, e.g., Jake Martin, *25 Greatest UFC Title Fights of All Time*, BLEACHER REPORT, Mar. 31, 2012, available at <http://bleacherreport.com/articles/1123311-25-greatest-ufc-title-fights-of-all-time>.

20. *Professional Boxing*, ENCARTA, June 5, 2008 (retrieved Nov. 14, 2008) (“If one fighter manages to capture the titles of all the major organizations at once, this is known as ‘unifying’ the title and the boxer is the ‘undisputed’ champion.”).

21. According to Dana White, he “did a deal with Pride where they could use Chuck Liddell and Ricco Rodriguez [in 2003], and they were supposed to in return give me Wanderlei Silva and Sakuraba” but UFC “never co-promoted.” Deposition of Dana White, Aug. 8, 2017, at 154:5-8.

22. See, e.g., <http://www.fightmatrix.com/mma-ranks/>

23. See, e.g., <http://www.state.nj.us/lps/sacb/docs/martial.html>; see also Deposition of Joseph Silva (June 7, 2017), at 91:9-17.

commissions operate independently, sanctioning bouts under differing sets of criteria.²⁴ Generally, athletic commissions are primarily concerned with Fighter safety, considering factors such as matched Fighter's relative experience level and quality.²⁵ As of 2009, athletic commissions typically adopted the Unified Rules of Mixed Martial Arts when sanctioning events.²⁶

19. Live MMA Events are produced by promoters such as the UFC, which plan and execute MMA bouts for commercial entertainment. Live MMA Events are multi-hour productions consisting of a series of bouts between pre-matched Fighters. Unlike in boxing, which frequently pits two boxers from competing promoters against each other, all participants in a given Live MMA Event are typically affiliated with the same promoter.²⁷ This series of bouts (the "Fight Card") occurs sequentially from the bottom, with the most anticipated fight of the night generally occurring last (the "Top of the Card").

20. MMA promoters rely on high-profile, highly-ranked Fighters at the Top of the Card to draw audiences to Live MMA Events.²⁸ A Live MMA Event that lacked these key inputs would

24. Deposition of Joseph Silva at 86:12-19.

25. *Id.* at 87:8-23, 107:4-19, 121:17-122:16.

26. See <http://www.abcboxing.com/committee-report-on-unified-rules-for-mma>.

27. Deposition of Joseph Silva at 215:11-216:18.

28. Joe Silva, UFC's chief matchmaker, testified that "you would like people to buy tickets to it, to tune in on TV to watch it. And they're going to want to see the biggest stars that you have." Silva Dep. 102:23-103:3. See also ZUF-00085896-901 (2011 e-mail from Joe Silva to Dana White, Lorenzo Fertitta, and Sean Shelby, citing the USA TODAY/SB Nation Consensus MMA Rankings, showing that UFC Fighters account for the majority of the top twenty-five and top ten Fighters in each of seven weight classes; subject line reads "We Own MMA."); WME-ZUFFA-00001150 at *9 (WME-IMG presentation stating "6-8 bouts [per year] with big stars is 'normal' and the key to PPV [revenue];" charting the number of "Star Bouts" over time; noting that "If Ronda [Rousey], Jon [Jones], Conor [McGregor] stay healthy, 2016 line up is solid."). MMA promoters also recognize the value of star Fighters. See Deposition of Jeremy Lappen, President of ProElite (holding company of EliteXC), February 28, 2017, at 136:9-167:6 ("Q: Are fighters with notoriety like [Kimbo Slice] essential to building a successful MMA promotion? A: Yeah, the fighters are what draws..., it's hard to find a star. They have a certain X factor. That's what the business is about, I think."). See also Deposition of Shannon Knapp, President of Invicta Fighting Championships, April 11, 2017, at 124:10-12 ("Q: High Profile, she [Cristiane Justino, AKA Cyborg], was a well known fighter? A: Uh-huh, yeah. Q: Did her presence on a card affect the viewership? A. Yeah."); ZFL-0460809 at 10 (Lorenzo Fertitta states "[o]ur thinking when we bought Strikeforce was to give fans the fights they want...Obviously, Alistair [Overeem]'s one of the best heavyweights in the world, but he also has that 'it' factor – the tremendous look, he's huge. It's a star factor.").

have difficulty drawing an audience, television distributors, and advertisers.²⁹ Fighting at the Top of the Card is the primary career objective for an MMA Fighter. Thus, the most successful Fighters accumulate enough wins with the goal of being matched against other prominent Fighters, and eventually a chance at winning a championship belt and obtaining a top ranking.³⁰ Of course, most Fighters do not become champions or fight at the Top of the Card. The median career length for an MMA Fighter is brief—approximately five bouts, spread over just 41 months.³¹

21. Zuffa assumes responsibility for the costs of the event’s production, including paying Fighters, whom it treats as independent contractors. In the UFC, Fighter pay is dependent on, among other things, a Fighter’s performance, with Fighters typically receiving a predetermined “show” amount to participate in a bout, and a “win” payment if the Fighter is declared the victor. Show and win payments are typically the same amount; winning a bout typically doubles a Fighter’s base pay.³² UFC Fighters may also receive discretionary, performance-based bonuses; in limited cases, certain top-tier Fighters (such as defending champions) may also receive a share of the total revenues generated by the event, usually via a share of Pay-Per-View (“PPV”) revenue.³³ MMA Fighters are generally tethered to Zuffa by contract for a time period (which, as discussed below, is often expanded by Zuffa by invoking certain contractual provisions designed to lock Fighters in as well as through other tactics) as well as for a specified number of bouts (“multi-bout contracts”); during this period (which can be indefinite in the case of retirement or extended

29. *Id.* See also WME_ZUFFA_00031950-60 (“History tells us that for a pay-per-view to do big numbers, it needs marquee names... sales estimates from the last nine years make it clear that it’s the name at the top of the card that sells pay-per-views.”).

30. Deposition of Jon Fitch, February 15, 2017, at 112:7 – 112:9 (“Fighters fight for titles. The most coveted title is the UFC title.”).

31. See II.C.2, *infra*.

32. See Part I.C, *infra*.

33. See Part I.C, *infra*.

injury), Fighters are unable to associate with other MMA promoters.³⁴ Despite these entanglements, as mentioned above, Zuffa still classifies its MMA Fighters as independent contractors rather than employees.³⁵ Zuffa pays Fighters no salary, offers none of the typical employee benefits (no pensions; no general health insurance; no life insurance; no disability benefits, etc.) and does not compensate Fighters for the costs that Fighters incur in the months (or years) of training leading up to a Live MMA Event. For instance, Zuffa does not pay for trainers, gym fees, managers, or equipment.³⁶ Zuffa pays Fighters for fighting only when they participate in bouts.³⁷

22. Zuffa earns revenue from four primary sources. *First*, Zuffa sells access to live events and taped content to a variety of media outlets, such as residential and commercial PPV, cable and broadcast television, video-on-demand (“VOD”), and the UFC Fight Pass online subscription service.³⁸ *Second*, Zuffa sells tickets for attendance at Live MMA Events. *Third*, Zuffa generates income from sponsorships, branding, and the advertising of products during its events. *Fourth*, Zuffa collects revenue from the sale of UFC-branded merchandise, such as video games, and collects royalties from products sold by licensees.³⁹

23. The UFC was purchased by Lorenzo and Frank Fertitta for \$2 million in 2001, and was sold to William Morris Endeavor-International Management Group (“WME-IMG”) in August

34. See Part II.B, *infra*.

35. [REDACTED] See also Hendrick 30(b)(6) V.I Tr. 264:8-10 (expressing Zuffa’s position that fighters are independent contractors); Silva Dep. 186:18-20.

36. Silva Dep. at 186:18-187:21.

37. See, e.g., DB-ZUFFA-00030406 (“Unlike many professional athlete organizations, the UFC’s contracts with its fighters do not guarantee significant payments to the fighters.”). See also Silva Dep. at 228:19-21 (confirming that Zuffa fighters are compensated for fighting only when they participate in bouts).

38. ZUF-00401766 at 8.

39. See Zuffa’s Consolidated P&L Statements from 2001 – November 2015: ZFL-1674096, ZFL-1053223, ZFL-1472224, ZFL-1381761, ZFL-1514712, ZFL-1514713, ZFL-1514769, ZFL-1514770, ZFL-1514804, ZFL-1514836, ZFL-1514837, ZFL-1514870, ZFL-1514900, ZFL-1514901, ZFL-1514933, ZFL-1514944, and ZFL-1514966.

2016 for approximately \$4 billion.⁴⁰ Many of the key innovations that accompanied MMA's evolution from its "no holds barred" origins into mainstream acceptance were developed before Zuffa purchased the UFC: Record evidence indicates that key rules and regulations, the use of appropriate gloves, timed rounds, weight classes—even the use of the octagonal ring—predate Zuffa's acquisition of the UFC.⁴¹

24. Prior to its sale to WME-IMG, Zuffa was privately owned and operated by a small group of individuals, initially consisting of Frank and Lorenzo Fertitta, who each held 45 percent equity in the venture, and Dana White, who owned the remaining 10 percent. Lorenzo Fertitta functioned as UFC's CEO with Dana White as President. Other Zuffa executives included Joe Silva, who served as chief matchmaker (until his retirement at the end of 2016), Kirk Hendrick, Zuffa's Chief Legal Officer, Ike Lawrence Epstein, Zuffa's Chief Operating Officer and John Mulkey, Zuffa's Chief Financial Officer.⁴² According to Lorenzo Fertitta, Zuffa generated over \$600 million in revenue in 2015.⁴³ As explained in Part III.A.5, Zuffa's market share in the Relevant Output Market has been approximately 90 percent by revenue since at least 2008. Zuffa's

40. See Darren Rovell & Brett Okamoto, *Dana White on \$4 billion UFC sale: 'Sport is going to the next level'*, ESPN, July 11, 2016, available at: http://www.espn.com/mma/story/_/id/16970360/ufc-sold-unprecedented-4-billion-dana-white-confirms.

41. Deposition of Joseph Silva, June 7, 2017 at 83:22-84:2 ("Q. What I'm trying to get at is the basic idea for the sport and the octagon and the early rule book, those were all in existence prior to Zuffa's purchase of the UFC; is that right? A. That's correct."); *id.* at 79:17-84:2 (Silva describes the iterative process he and others used in developing the rules and regulations in force between 1994 and 2001).

42. See Hendrick 30(b)(6) Tr. at 15:3-13 (describing executive structure); Deposition of John Mulkey, April 19, 2017, at 11:22-12:6 (describing his role); Deposition of Ike Lawrence Epstein pursuant to Rule 30(b)(6) V.I, Dec. 2, 2016 at 10:10-21 (same); Silva Dep. at 15:3-5 (stating he retired at the end of 2016). See also ZUF-00096950; Deposition of Joseph Silva, June 7, 2017, at 76:22-84:2. See also ZFL-0000113 at 20; ZFL-0000136 at 24.

43. Jesse Holland, *Lorenzo Fertitta: UFC will generate record-high \$600 million revenue for 2015*, MMA MANIA, Dec. 28, 2015, available at <http://www.mmamania.com/2015/12/28/10675158/lorenzo-fertitta-ufc-will-generate-record-high-600-million-revenue-2015-mma>; see also ZFL-1514966 (showing revenues through November 2015 of \$542 million).

dominant position in the promotion of professional Live MMA Events is widely recognized around the world.⁴⁴

B. Academic Literature on MMA

25. In a book chapter published in 2011, economist Trevor Collier and his co-authors provide an overview of the MMA industry, and analyze the factors influencing the likelihood of a Fighter winning a bout by decision (as opposed to winning by knockout, TKO, or submission) in the UFC.⁴⁵ Using data on individual fights from FightMetric, the official statistics provider for the UFC,⁴⁶ the authors find that knockdowns and damage inflicted have the largest marginal effect of influencing judges' decisions.⁴⁷ The authors analyze only UFC bouts while ignoring other MMA promoters; they note that the UFC is "the largest and most successful organization within the industry."⁴⁸

26. In a 2014 working paper, economist Paul Gift models round-by-round scoring outcomes based on performance characteristics using FightMetric data, as well as non-performance characteristics, to test for certain behavioral biases among MMA judges.⁴⁹ The author analyzes "all UFC, WEC, and Strikeforce events promoted under the Zuffa banner"⁵⁰ between

44. See Part III.A.8, *infra*. See also ZUF-00162329-382 at 382 ("...the UFC holds the dominant market position within the sport and continues to do so even as a highly fragmented group of competitors have entered the market in an attempt to emulate UFC's success"). See also Matthew Miller, *Ultimate Cash Machine*, FORBES, Apr. 17, 2008, available at <https://www.forbes.com/forbes/2008/0505/080.html>.

45. *Aggression in MMA*, *supra*.

46. See <http://www.fightmetric.com/>.

47. *Aggression in MMA*, *supra*, at 97.

48. *Id.*

49. Paul Gift, "Performance Evaluation and Favoritism: Evidence from Mixed Martial Arts," Pepperdine University Working Paper (2014), available at <http://www.fightmetric.com/company>.

50. *Id.* at 7.

September 28, 2001 and November 17, 2012 in Nevada and California.⁵¹ His results provide evidence of bias towards heavy favorites and the Fighter who won the previous round.⁵²

27. In a 2012 master's thesis, Jeremiah Johnson correlates win/loss outcomes of MMA bouts using fight statistics from FightMetric.⁵³ The author's data set includes "every UFC event, as well as every event from other prominent promoters and events deemed to be significant."⁵⁴ Johnson finds that the count of knockdowns, takedowns, positional advances, and submission attempts are all positively and significantly correlated with a Fighter winning a bout, while a count of strikes landed is not.⁵⁵

28. In a 2015 article published in the *Journal of Business and Economics*, Richard McGowan and John Mahon estimate an econometric model analyzing the determinants of PPV buy rates for UFC events.⁵⁶ The authors' data set encompasses 105 UFC PPV events, beginning with UFC 57 in February 2006 and ending with UFC 170 in February 2014.⁵⁷ Based on their econometric analysis, the authors conclude as follows:

The results of our study are not good news for the UFC as a company. The most important takeaway is that the identities of the fighters competing matter more than any title they would be competing for. Thus, when it comes to generating abnormally high PPV buy rates, the fighter has more drawing power than the brand. This conclusion could be used as an argument for fighters to get a larger percentage of the PPV revenue, since the fighters themselves, not the UFC titles, are what truly drive PPV buy rates.⁵⁸

51. *Id.*

52. *Id.* at 1.

53. Jeremiah Douglas Johnson, *Predicting Outcomes Of Mixed Martial Arts Fights With Novel Fight Variables*, Thesis Submitted to the Graduate Faculty of the University of Georgia in Partial Fulfillment of the Requirements for the Degree Master Of Science (2012), available at https://getd.libs.uga.edu/pdfs/johnson_jeremiah_d_201208_ms.pdf

54. *Id.* at 6.

55. *Id.* at 23.

56. Richard McGowan and John Mahon, *Demand for the Ultimate Fighting Championship: An Econometric Analysis of PPV Buy Rates* 6(6) J. BUS. & ECON. 1032-1056 (2015) [hereafter "McGowan & Mahon"].

57. *Id.* at 1042.

58. *Id.* at 1047. *See also* 1046 ("For example, while Georges St. Pierre welterweight champion of the UFC, the welterweight title had a hugely positive coefficient. However, the coefficient's value was such not because of the importance of the welterweight belt, but because of the drawing power of St. Pierre. After the addition of the fighter ID control variables, only the heavyweight title still has a statistically significant positive coefficient in both Model 1

C. Forms of Fighter Compensation Paid by Zuffa to Members of the Bout Class

29. In this section, I review the forms of compensation that Bout Class members receive from Zuffa. The terms of a Fighter's compensation are defined in a Promotional and Ancillary Rights Agreements ("PAR" Agreements) that Zuffa requires all of its Fighters to execute.⁵⁹ Each governs the Fighter's relationship with Zuffa from the moment of execution, during the defined "term" (subject to extension at Zuffa's election under certain conditions), over the course of multiple bouts, and with respect to some aspects of the relationship, in perpetuity.⁶⁰ Prior to any bout, a UFC Fighter also signs a "Bout Agreement,"⁶¹ which affirms event-specific compensation details.

1. Show and Win Purses

30. A Fighter receives a "show" purse for his or her participation in a bout. An

and Model 2. The welterweight title's effect has been correctly reapportioned to Georges St. Pierre, and the women's title's effect has been reapportioned to Ronda Rousey.").

59. Deposition of Joseph Silva, June 7, 2017, at 31:23-33:22.

60. *See, e.g.,* [REDACTED]

61. *Id.*

additional “win” purse is also awarded if the Fighter is declared the winner of his or her bout. In over 94 percent of Zuffa’s events, the “win” amount is simply the “show” amount again, meaning that Fighters generally double their base pay if they win their fight.⁶²

2. Discretionary and Performance Pay

31. Zuffa sometimes awards discretionary and performance pay following a fight deemed crowd-pleasing by Zuffa. These include bonuses for the “Fight of the Night,” exceptional “Performance,” the “KO [Knockout] of the Night,” and the “Submission of the Night.”⁶³ These payments are awarded based on a subjective evaluation of various factors. Sean Shelby, one of UFC’s two “Talent Relations” employees⁶⁴ responsible for matching Fighters and lining up the card (or “matchmakers”) explains that in awarding discretionary pay, “[t]here is a bit of a grey area, but simply, the more spectacular, higher level of difficulty, and the higher level of competition and stakes all factor in.”⁶⁵ Because Zuffa is not contractually bound to make any such payments, Zuffa Fighters cannot be certain as to whether they will receive any such compensation at any point in their careers.⁶⁶

62. ZFL-0000003. *See also* Deposition of Lorenzo Fertitta, March 23, 2017 at 174:20-179:10; Deposition of Sean Shelby, April 12, 2017 at 208:9-209:17 (describing to the standard “show and win money” structure); Silva Dep. at 32:16-18 & 262:12-17 (same).

63. ZFL-0000003. *See also* Fertitta Tr. 175:5-15.

64. *See* ZUF-00096950.

65. ZUF-00140700 (“Fight of The Night, KO of The Night, & Sub of The Night Bonuses are mostly based on the level of competition and difficulty of technique. If a prelim has a great fight but the main event is a great fight too, it will almost always go to the main event where more is on the line. If a guy gets a win with a guillotine but another wins by a flying triangle, it will go to the guy with the flying triangle. If a guy subs someone who has never been subbed before and has incredible submission defense, that counts as well. There is a bit of a grey area, but simply, the more spectacular, higher level of difficulty, and the higher level of competition and stakes all factor in. What can’t get lost through is this is something that is merely extra. It’s Zuffa going above and beyond and is not contractually obligated to do this.”).

66. *Id.*; *see also* Fertitta Tr. 180:19-22.

3. PPV Royalties

32. A small number of top-tier Fighters receive compensation based on PPV purchases.⁶⁷ These Fighters typically receive a flat amount of money per PPV ticket sale, which may increase in discrete increments as the total number of tickets sold grows.⁶⁸ Record evidence indicates that Zuffa generally offered PPV royalties only to defending champions (as opposed to challengers), and sometimes to former champions.⁶⁹

4. Letters of Agreement

33. A small number of top-tier Fighters negotiate individual Letters of Agreement (“LOA”) with Zuffa prior to a Live MMA Event.⁷⁰ These are generally lump-sum payments to Fighters following a Live MMA Event, with the amount often contingent on the outcome of the fight.⁷¹ Some LOAs specify bonuses based on a specific outcome (such as knockout),⁷² and may

67. See ZFL-0000003. See also Fertitta Tr. 186:14-187:11 & 188:19-190:6.

68. For example, a Fighter may receive \$1.00 for each PPV ticket sold between 200,000 and 400,000 tickets; \$2.00 for each PPV ticket sold between 400,000 and 600,000 tickets; and \$2.50 for each PPV ticket sold over 600,000 tickets. See ZFL-1833347.

69. [REDACTED]

[REDACTED] Fertitta Tr. 186:22-187:11. See also ZFL-1005485 (an email on compensation negotiations for Holly Holm where Sean Shelby wrote that “a PPV component as a challenger is a dealbreaker,” to which Dana White replies “For ppv bonus she must be defending [a championship].” At the time of UFC 183: SILVA vs DIAZ in January 2015, former UFC middleweight champion Anderson Silva had lost his middleweight title at UFC 162 in July 2013. His opponent, Nick Diaz, was not ranked in the UFC but was a former WEC and Strikeforce Welterweight champion. Even though neither Fighter was a defending champion, they both received PPV shares from the event, presumably because each was a former champion. See ZFL-0000003.xlsx (showing PPV and LOA compensation for both Diaz and Silva).

70. [REDACTED]

71. See, e.g., ZFL-0127082, an agreement with Brock Lesnar that specifies lump sums to be paid conditional on champion status (“For each and every Bout, in which Fighter participates where he is recognized as a UFC Champion, by ZUFFA, within thirty (30) days following the completion of each Bout, as contemplated in Section 7.1 (a) of the Promotional Agreement, Zuffa shall pay to DEATHCLUTCH, via bank wire or check, the amount of Eight Hundred Twelve Thousand Five Hundred Dollars (US \$812,500.00), less all permissible or required deductions and withholdings. Within sixty (60) days following the completion of each Bout, as contemplated in Section 7.1 (a) of the Promotional Agreement, Zuffa shall pay to DEATHCLUTCH, via bank wire or check, the additional amount of Eight Hundred Twelve Thousand Five Hundred Dollars (US \$812,500.00), less all permissible or required deductions and withholdings, for a total combined payment of One Million Six Hundred Twenty-Five Thousand Dollars (US \$1,625,000.00).

also incorporate sponsorship or endorsement agreements or both.⁷³ The use of LOAs also allows Zuffa to avoid reporting the total compensation paid to Fighters to state athletic commissions, which keeps this information out of the public domain.⁷⁴

D. Forms of Fighter Compensation Paid by Zuffa to the Identity Class

34. Payments to Fighters for the use of their identity rights fall into one of three broad categories: (1) merchandizing royalties, (2) sponsorship payments, and (3) video game payments. A PAR signed by a Fighter generally gives Zuffa the “exclusive worldwide right to use of the Fighter’s name, likeness, biography and other aspects of the Fighter’s identity in connection with promotion of the Bouts or the UFC brand.”⁷⁵ These rights are “held by UFC in perpetuity and shall

For each and every Bout, in which Fighter participates where he is not recognized as a UFC Champion, by ZUFFA, within thirty (30) days following the completion of each Bout, as contemplated in Section 7.1 (c) of the Promotional Agreement, Zuffa shall pay to DEATHCLUTCH, via bank wire or check, the amount of Three Hundred Seventy Five Thousand Dollars (US \$375,000.00), less all permissible or required deductions and withholdings. Within sixty (60) days following the completion of each Bout, as contemplated in Section 7.1 (c) of the Promotional Agreement, Zuffa shall pay to DEATHCLUTCH, via bank wire or check, the additional amount of Three Hundred Seventy Five Thousand Dollars (US \$375,000.00), less all permissible or required deductions and withholdings for a total combined payment of Seven Hundred Fifty Thousand Dollars (US \$750,000.00).”). *See also* ZFL-1833347.

72. *See, e.g.*, ZFL-0393948, an agreement with Lyoto Machida that awards a stoppage bonus (“Further, Zuffa shall pay Fighter a Stoppage Bonus for such Bout in the amount of One Hundred Thousand Dollars (US \$100,000), less all permissible or required deductions and withholding. For purposes of this Agreement, a Stoppage occurs if and only if Fighter is declared the winner of the Bout by Knock Out, Technical Knock Out or Submission by the applicable Athletic Commission.”).

73. *See, e.g.*, ZFL-0299212, an agreement with Cung Le that awards a sponsorship bonus (“In consideration of the promotional and sponsorship activities to be performed by Cung Le (“Fighter”), in association with the November 10, 2012, UFC on Fuel bout (“the Macau Event”), and the grant of ancillary rights made pursuant to Section 3 of Fighter’s Promotional and Ancillary Rights Agreement, fully executed on or about September 15, 2011 (the “Promotional Agreement”), this Letter of Agreement (the “Agreement”) shall confirm the terms and conditions by and between Zuffa, LLC (“Zuffa”), and Fighter who is the sole and exclusive owner of the intellectual property rights of Fighter. Specifically, the following terms and conditions are hereby agreed to for valuable consideration: 1. Upon completion of the Macau Event, as contemplated in Section 7.1(c) of the Promotional Agreement, which is incorporated by reference, Zuffa shall pay to Fighter, via check, the additional amount of Four Hundred Thousand Dollars (\$400,000.00), less all permissible or required deductions and withholdings. For the avoidance of doubt, there shall be no Win Bonus if Fighter is declared winner of the Bout.”).

74. *See, e.g.*, ZFL-2480590 (Mersch writes on July 10, 2014, “Normally we wouldn’t want Overeem making that much out in the public so we’d have to do a separate LOA. But if they don’t release it, we could leave it as is.”).

75. DB-ZUFFA-00007109. *See also* ZFL-0506593, ZFL-0175016, ZFL-0132594, ZFL-0469456, and ZFL-0086231. *See also* ZFL-1690436-444 (Fighter IP Guidelines for Consumer Products; provides Zuffa’s interpretation of what Identity rights are included in the PARs, and the Identity rights for which Zuffa believes Fighters are owed royalties).

survive even the death of the Fighter.”⁷⁶ Fighters may also sign merchandising agreements, in which the Fighter grants Zuffa a non-exclusive and sub-licensable right to use intellectual property of the Fighter for the sale of UFC-branded merchandise in exchange for royalty payments of 10 to 15 percent of sales revenue, or 20 to 30 percent of license revenue.⁷⁷

35. Members of the Identity Class may receive two forms of payments in exchange for the use of their Identity by sponsors. *First*, historically many sponsors have paid Fighters directly for services performed on behalf of that sponsor, including wearing their logo at UFC events.⁷⁸ In or around 2009, Zuffa began requiring that some of these sponsors separately pay Zuffa a brand affiliation fee or “sponsorship tax” for the right to sponsor Fighters at UFC events.⁷⁹ Over time, Zuffa expanded the categories of sponsors subject to the sponsorship tax.⁸⁰ In 2015, Zuffa implemented a new “Athlete Outfitting Program,” which required Fighters to wear Reebok “kits,” thus limiting the outside sponsorship revenue athletes could obtain from sponsorships at UFC events.⁸¹ Once Zuffa implemented the Athlete Outfitting Program, in an apparent attempt to make up for some of the Fighters’ lost revenues from sponsors due to Zuffa’s policies, it began

76. DB-ZUFFA-00007019.

77. *Id.* See also ZFL-0000650.

78. Mossholder Dep. Ex. 36-A at 32 (“Most sponsors contract directly with athletes under contract with the UFC and determine the appropriate amount of compensation for that agreement without Zuffa’s involvement.”).

79. The first record of a “sponsorship tax” occurs in an email conversation with an apparel sponsor dated 1/8/2009. See ZUF-00157206. Batchvarova Dep. at 26:9-27:4 (“At the time apparel companies ... that were sponsoring athletes going into the octagon were paying an affiliation fee.”); see also ZUF-00017896 and ZUF-00086103.

80. See, e.g., LESPLAINTIFFS-0032350 (“The only changes to in [sic] the sponsorship world pertain to tshirt/apparel companies... in short, any tshirt company wishing to sponsor UFC fighters must join the UFC approved sponsor program.”); ZFL-1974115 (“NOTICE – For all Zuffa events going forward, only approved on-line retailers will be allowed to sponsor fighters. To that end, you must have a separately executed sponsorship agreement with Zuffa to be able to sponsor fighters for any events. This new policy will kick in beginning with UFC 116 on July 3, 2010.”).

81. See ZFL-0802996, which details the UFC’s “Athlete Outfitting Policy.” This policy book provides guidelines to all Fighters on wearing officially sponsored apparel and gear, and the compensation and fines associated with compliance. Reebok (apparel), Century (gloves), and Monster (headphones) are the three “approved brands” listed. Outside of Zuffa events including “Fight Week” Fighters could continue to make their own arrangements with sponsors. Batchvarova Dep. at 27:15-29:14.

compensating Fighters for complying with the Athlete Outfitting Policy through a formula based on tenure at Zuffa.⁸² *Second*, for certain sponsors willing to pay a premium to become an “official sponsor” of the UFC, Zuffa would negotiate with individual Fighters on that sponsor’s behalf and would make payments to Fighters for services performed on behalf of a particular sponsor.⁸³ These services included wearing the sponsor’s logo in the Octagon and making other appearances on behalf of the sponsor.⁸⁴

36. Some Fighters received compensation for their appearance in UFC-branded video games.⁸⁵ In September 2006⁸⁶ and June 2012,⁸⁷ respectively, Zuffa entered into agreements with two game publishers (THQ and Electronic Arts) to develop five video games featuring named Fighters from 2006 to the present. Of these, Zuffa provided specific payment data for three: UFC 2009 Undisputed, UFC 2010 Undisputed, and UFC Undisputed 3 (2012). Two more video games, EA Sports UFC and EA Sports UFC 2, were produced in 2014 and 2016, respectively.⁸⁸ Finally, beginning in June 2009,⁸⁹ Zuffa began selling trading cards containing Fighters’ likenesses without

82. Batchvarova Dep. at 32:5-34:20 (“[W]e came up with the methodology which is currently actually employed which is assigning by tenure, which is objective.”).

83. 30(b)(6) Deposition of Michael Mossholder (December 1, 2016) at 143:19-146:121 (“Mossholder Dep.”). *See also id.* Exhibit 36-A at 29 (“Some sponsors prefer to deal only with Zuffa and have them handle all payments, even to athletes.”). This was the arrangement Zuffa had with certain large sponsors such as Anheuser Busch. The identity “assets” that Zuffa licensed on behalf of Fighters include “their individual IP, their ability to do appearances, production days, use of their individual social media, use of their individual digital, their fighter kits.” *Id.* at 156:12-16.

84. *Id.*

85. ZFL-1023959.

86. ZFL-0871571.

87. ZFL-1394078.

88. *See* ZFL-0000259 and the list of UFC branded video games, *available at* <https://www.giantbomb.com/ufc/3025-248/games/>

89. ZFL-1825387 at row 123 of the Merchandise Licensing Tab. The Topps Trading Card Company Term is listed as “6/5/08 - 5/1/2011 extended to 5/1/16.”

having merchandise rights agreements in place with each Fighter. It sought out separate merchandise agreements from such Fighters after the fact.⁹⁰

37. Most Fighters did not receive any compensation from Zuffa for use of their Identities; between 2010 and 2015, fewer than 40 percent of Fighters received some form of Identity compensation from Zuffa.⁹¹

II. NATURE OF THE CHALLENGED CONDUCT

38. In this section, I describe the Challenged Conduct. I begin by classifying the Challenged Conduct according to its “horizontal” and “vertical” aspects, based on whether the conduct involved other MMA promoters (horizontal) or whether the conduct involved MMA “inputs” such as Fighters (vertical). I then explain how the Challenged Conduct served to initiate, renew, and extend Fighter contracts, making Zuffa’s exclusionary provisions effectively perpetual (or nearly so) for the vast majority of Fighters, especially in relation to Fighters’ relatively short careers.

39. Economists and antitrust practitioners recognize that horizontal *and* vertical conduct can have anticompetitive effects when undertaken by a firm with significant market power, and the effects of each form of conduct can and often do amplify the other. In Parts III.A and III.B, I demonstrate that Zuffa does possess significant monopoly and monopsony power in the Relevant Output and Input Markets, respectively. In Parts III.C and III.D, I demonstrate that the Challenged Conduct did, in fact, foreclose competition and generate anticompetitive effects.

90. See ZFL-2536392 (August 13, 2012 email from Tracy Long notes: “Wow, that is a lot [of fighters missing merchandise rights agreements.] How did we let it get to so many? I didn’t realize we did not have one for Cung Le.”).

91. See ZFL-2603704 (showing that 151 Fighters received sponsorship payments, 231 received video game payments, and 333 received merchandise royalties). For counts of total Fighters, see ZFL-0000003; ZFL-2603701.

A. Nature of the Horizontal Conduct

40. Since buying the UFC in 2001, Zuffa has acquired five MMA promoters. Horizontal aspects of the Challenged Conduct include these horizontal acquisitions, as well as Zuffa's counter-programming of other Live MMA Events, and Zuffa's agreements, including non-compete agreements, with other MMA promoters. Economists and antitrust practitioners recognize that horizontal acquisitions can have anticompetitive effects whenever they lessen actual or potential competition with a rival or potential rival.⁹² Non-compete agreements and collaboration with horizontal competitors can also be anticompetitive,⁹³ as can strategic efforts to harm competitors or potential competitors such as counter-programming.⁹⁴

1. Acquisitions of Potential Rivals

41. In 2006, Zuffa purchased the World Fighting Alliance ("WFA")⁹⁵ and World Extreme Cagefighting ("WEC").⁹⁶ WFA was a Las Vegas-based MMA promoter that put on four

92. U.S. Department of Justice and Federal Trade Commission, *Horizontal Merger Guidelines* (2010) [hereafter *Merger Guidelines*] §1 ("[M]ergers should not be permitted to create, enhance, or entrench market power or to facilitate its exercise...A merger enhances market power if it is likely to encourage one or more firms to raise price, reduce output, diminish innovation, or otherwise harm customers as a result of diminished competitive constraints or incentives.").

93. *See, e.g.*, Department of Justice and Federal Trade Commission, Antitrust Guidelines for Collaborations Among Competitors (April 2000), §2.2, available at https://www.ftc.gov/sites/default/files/documents/public_events/joint-venture-hearings-antitrust-guidelines-collaboration-among-competitors/ftcdojguidelines-2.pdf. Although non-compete agreements frequently consist of contracts between employers and employees, Zuffa's non-compete agreements are essentially horizontal agreements with potential competitors, as explained below.

94. *See* DENNIS CARLTON & JEFFREY PERLOFF, *MODERN INDUSTRIAL ORGANIZATION* (Pearson 2005 4th ed.) [hereafter *MODERN IO*] at 386-87. As Professors Carlton and Perloff explain, strategic efforts to harm competitors are more likely to be harmful when entry is difficult. This condition is satisfied here, given that Zuffa's staggered, multi-bout exclusive contracts constitute an artificial barrier to entry.

95. Deposition of Ike Lawrence Epstein pursuant to Rule 30(b)(6), Dec. 2, 2016 at 70:14-24 (discussing WFA acquisition); *see also* *UFC Acquires World Fighting Alliance, Inc.*, MMA JUNKIE, Dec. 11, 2016, available at <http://mmajunkie.com/2006/12/ufc-acquires-world-fighting-alliance-inc.>

96. Ken Pishna & Ivan Trembow, *UFC Buying World Extreme Cagefighting*, MMA WEEKLY, Dec. 11, 2006, available at <https://web.archive.org/web/20070929111019/http://www.mmaweekly.com/absolutenm/templates/dailynews.asp?articleid=3053&zoneid=13>.

Live MMA Events between 2001 and 2006.⁹⁷ Before its acquisition, WFA attracted headlining Fighters such as Quinton Jackson and Matt Lindland.⁹⁸ WEC was a California-based MMA promoter that produced 24 events between 2001 and 2006.⁹⁹ Zuffa announced its acquisitions of WFA and WEC on the same day in December 2006. The WFA acquisition was structured as an asset purchase in which Zuffa acquired select Fighter contracts, trademarks, and other intellectual properties;¹⁰⁰ these assets were immediately absorbed into the UFC and WFA ceased to exist. In contrast, Zuffa's purchase of WEC left WEC with its former leadership intact.¹⁰¹

42. Zuffa reportedly intended WEC “to serve as a venue in which to groom up-and-coming talent” and as “a strategic maneuver to impede the chances of other MMA promotions (specifically the IFL or Pride) to secure a national TV deal in the United States.”¹⁰² Zuffa's internal documents confirm that Zuffa acquired the WFA in a “defensive strategy to eliminate a second tier competitive brand,”¹⁰³ and that “[t]he reason for the acquisition was to control the

97. Epstein 30(b)(6) Tr. 70:25-71:15. See also <http://www.sherdog.com/organizations/World-Fighting-Alliance-68>.

98. Epstein 30(b)(6) Tr. 72:12-74:9. See also Josh Gross, *Lappen Sues WFA for Breach of Contract*, SHERDOG, Dec. 7, 2006, available at <http://www.sherdog.com/news/articles/Lappen-Sues-WFA-for-Breach-of-Contract-6308>

99. Epstein 30(b)(6) Tr. 26:19-27:3. See also <http://www.sherdog.com/organizations/World-Extreme-Cagefighting-48>.

100. *UFC Acquires World Fighting Alliance, Inc.*, MMA JUNKIE, Dec. 11, 2016, available at <http://mmajunkie.com/2006/12/ufc-acquires-world-fighting-alliance-inc>.

101. Epstein 30(b)(6) Tr. 24:12-13 (stating Zuffa's testimony that it acquired the WEC); Ken Pishna & Ivan Trembow, *UFC Buying World Extreme Cagefighting*, MMA WEEKLY, Dec. 11, 2006, available at <https://web.archive.org/web/20070929111019/http://www.mmaweekly.com/absolutenm/templates/dailynews.asp?articleid=3053&zoneid=13>.

102. *Id.* See also “Exclusive: Dana White Announces UFC-WEC Merger,” available at <https://www.youtube.com/watch?v=zCIWWLnJSN4&feature=sub>; ZFL-1240584 at -589 (“The primary purpose for Zuffa's acquisition of the small, regionally based WEC was to obtain a second brand, separate and distinct from the UFC, which could produce MMA events for non-PPV television distribution. The WEC would also serve as a second tier or ‘minor league’ feeder platform where younger, less experienced, lighter weight, and less well-known fighters could gain public awareness before developing to the point when they can move up to the UFC level of competition.”).

103. ZFL-1240584 at 590.

WFA and prevent it from competing with the WEC and UFC.”¹⁰⁴ As a part of the acquisition, Zuffa also secured seven-year non-compete agreements with WFA’s principal owners.¹⁰⁵

43. Zuffa purchased Pride Fighting Championships (“Pride”) in April 2007.¹⁰⁶ Pride was a Japan-based MMA promoter that produced 68 events between 1997 and 2007, two of which occurred in Las Vegas starting in October 2006.¹⁰⁷ Zuffa has written that, “Pride was widely...considered to be the second most recognized MMA brand worldwide when acquired.”¹⁰⁸ In an email to Frank and Lorenzo Fertitta detailing the result of acquisition talks with Pride’s owners, Thomas Paschall, outside counsel for Zuffa during the acquisition of Pride, noted “the strategic/preemptive nature of this acquisition (*i.e.*, to stop others from buying it) and your having seriously contemplated acquiring them only to shut down their business and utilize their Fighters in the UFC.”¹⁰⁹ Within about six months of the acquisition, Zuffa fired Japanese staffers and closed down Pride’s Tokyo offices.¹¹⁰ When the Pride acquisition was underway, Zuffa paid \$10 million to the CEO of Pride for a seven-year non-compete clause.¹¹¹

104. *Id.*

105. *Id.* See also ZUF-00377706 (T. Louis Palazzo Non-Competition Agreement); ZUF-00377712 (Ross C. Goodman Non-Competition Agreement).

106. Epstein 30(b)(6) Tr. 88:5-7 (stating on behalf of Zuffa that Zuffa acquired Pride); *id.* at 100:10-12 (“And the transaction didn’t close until, I guess, May of 2007...”); see also “*Done deal: UFC owners purchase PRIDE FC*,” MMA MANIA, Mar. 27, 2007, available at <http://www.mmamania.com/2007/03/27/done-deal-ufc-owners-purchase-pride-fc>. The actual agreement was consummated on April 18, 2007. See ZFL-1216165.

107. See <http://www.sherdog.com/organizations/Pride-Fighting-Championships-3>

108. See Goldman 30(b)(6) Tr. 125:5-14 (discussing Zuffa’s handwritten edits to a draft of the 2009 Deutsche Bank Confidential Information Memorandum).

109. ZUF-00031544. See also Deposition of Drew Goldman pursuant to Rule 30(b)(6), April 28, 2017 at 73:17-74:1 (testifying on behalf of Deutsche Bank that, based on conversations with Zuffa and materials provided by Zuffa, Deutsche Bank’s interpretation was that “Each acquisition [Pride, WEC and WFA] had unique offensive and defensive purposes at the time. However, both the WFA and Pride pending transactions resulted in Zuffa’s roster of elite fighters expanding significantly.”).

110. Zach Arnold, *PRIDE office in Tokyo shut down, all workers fired*, FIGHT OPINION, Oct. 4, 2007, available at <http://www.fightopinion.com/2007/10/04/pride-office-in-tokyo-shut-down-all-workers-fired/>.

111. ZFL-1676293 at 96.

44. Affliction Clothing was a U.S.-based MMA clothing label and was one of the primary clothing sponsors of Zuffa Fighters. Backed by prominent investors, AEG put on two successful Live MMA Events.¹¹² In early 2008, Zuffa terminated its sponsorship relationship with Affliction Clothing when Zuffa received information that Affliction was planning on entering the MMA promoter business under their new subsidiary, AEG.¹¹³ In reaction to Affliction's decision to get into the business of MMA fight promotion, Zuffa barred Affliction from sponsoring any of its events or any of its Fighters.¹¹⁴ This weakened Affliction, which ultimately decided to exit the MMA Promotion business.

45. Zuffa purchased AEG's assets and Fighters on July 23, 2009. The purchase agreement stated that "AEG shall ... cancel any and all future AEG Events or other Live MMA Events that AEG is involved in [and] cease ... any and all MMA promotional businesses and endeavors by AEG...."¹¹⁵ According to a final draft of a letter summarizing the agreement, the deal involved Affliction "exiting the MMA professional business,"¹¹⁶ transferring Fighters under contract to Zuffa, and "creating some sort of promotional affiliation with the Ultimate Fighting Championship (UFC)."¹¹⁷ Record evidence indicates that Zuffa saw Affliction as a competitive

112. ZFL-2463304 at 25.

113. Tim Ngo, *Affliction Banned From Sponsoring UFC Fighters*, 5TH ROUND, Jan. 25, 2008, available at <http://www.5thround.com/356/report-affliction-banned-from-sponsoring-fighters-in-the-ufc/#more-356>.

114. MMA Mania, "Report: Affliction MMA folds, will now be allowed to sponsor UFC and its fighters," (July 24, 2009), available at <https://www.mmamania.com/2009/07/24/report-affliction-folds-will-now-sponsor-ufc> ("Yahoo! Sports today issued a report that Affliction MMA will cease to exist, coming to terms with Ultimate Fighting Championship (UFC) under an agreement that will allow the clothing brand to once again sponsor the world's top promotion and the fighters under its umbrella. Affliction was 'banned' from doing so when it decided to begin promoting events last year.").

115. ZFL-2020850 at 50-51.

116. ZFL-2764805.

117. *Id.*

threat due to certain key Fighters affiliated with Affliction, and that Zuffa viewed the agreement to put Affliction out of the MMA business as “a big win.”¹¹⁸

46. After the acquisition agreement was finalized, UFC’s Assistant General Counsel Michael Mersch wrote an email noting with reference to Affliction’s demise that “[o]ur main rival is done.”¹¹⁹ Mersch also observed that acquiring Affliction’s Fighter contracts would enhance the UFC’s ability to put on attractive fights.¹²⁰ After the purchase, and once Affliction was no longer in the MMA promotion business, Zuffa reestablished a sponsorship affiliation with Affliction Clothing.¹²¹

47. Zuffa purchased Strikeforce, the second largest MMA promoter at the time, in March 2011.¹²² At the time of the purchase, Strikeforce was the “second most prominent and recognized ... MMA organization in the world,” and it had the most prominent women’s MMA division.¹²³ Strikeforce produced 47 events across the United States before being acquired.¹²⁴ By 2009, “Strikeforce [had]... emerged as the world’s second most prominent promotion, with sufficient size and assets to maintain and improve its position.”¹²⁵ Its rise to prominence was cited

118. See DB-ZUFFA-00008846 at 847 (a Deutsche Bank employee who worked with Zuffa in connection with a financing in late 2009 reported on a conversation he had had with Zuffa CFO John Mulkey in July 2009 wherein Mulkey “explained one of the reasons that UFC management has been pre-occupied is due to negotiations with Affliction, which is the next biggest MMA competitor. Affliction is officially getting out of the business ... and UFC will essentially takeover whichever fighter contracts it wants. Affliction will also pay UFC to become a sponsor going forward. [Mulkey t]hinks it is a really big win for the company.”).

119. ZFL-2193553.

120. *Id.* See also Deposition of Michael Mersch, July 14, 2017, at 447:4-450:8.

121. ZFL-2463304 at 25.

122. Strikeforce would continue to operate as a standalone promoter until January 2013, after which its Fighters and remaining assets were incorporated into UFC. See Nate Wilcox, *More Details Emerge on UFC Acquisition of Strikeforce*, BLOODY ELBOW, Mar. 13, 2011, available at <http://www.bloodyelbow.com/2011/3/13/2047456/ufc-strikeforce-acquisition-more-details-emerge>. See also *Strikeforce confirms Jan. 12 event is final Showtime broadcast*, MMA JUNKIE, Dec. 20, 2012, available at <https://web.archive.org/web/20131102021751/http://www.mmajunkie.com/news/2012/12/strikeforce-confirms-jan-12-event-is-final-showtime-broadcast>.

123. ZFL-2463304 at 9.

124. See <http://www.sherdog.com/organizations/Strikeforce-716>

125. ZFL-2463304 at 14.

as the top story of 2009 by Sherdog.com, a popular Internet source of MMA news and information.¹²⁶

48. UFC matchmaker Joe Silva sent an email setting forth the January 27, 2011 consensus rankings of MMA Fighters in major weight classes, noting that the UFC “Own[ed] MMA.”¹²⁷ Those consensus rankings, however, showed that Strikeforce had 3 of the top 10 (and 6 of the top 25) heavyweight Fighters; 5 of the top 25 (and a top 10) light heavyweight Fighter; 2 of the top 10 (and 4 of the top 25) middleweight Fighters; 2 of the top 10 welterweight Fighters; and 3 of the top 25 (including 1 top 3) lightweight Fighters.¹²⁸ No promotion other than the UFC had as many highly ranked Fighters in late January 2011, just two months prior to Zuffa’s acquisition of Strikeforce.¹²⁹

49. In or around October 2010, Dana White called the Strikeforce owners to inform them that Lorenzo Fertitta wanted to acquire Strikeforce and, in November 2010, the Strikeforce owners met with representatives of the UFC concerning the potential acquisition of Strikeforce at the offices of WME.¹³⁰ At that meeting, Lorenzo Fertitta reportedly stated that he thought “Strikeforce is building a great brand, but [Zuffa felt] there should only be one brand, so [Zuffa]

126. *Id.* at 11. *See also* Coker Dep. at 38:6-12 (Strikeforce “got on [the UFC’s] radar and I think they [Zuffa] wanted to control the market share.”). In 2009, after Affliction exited the MMA promotion business and sold its assets to Zuffa, Mr. Coker (Strikeforce’s founder) observed that “Affliction took the easy way out. [N]ow it’s UFC and Strikeforce. If you can’t battle these guys it’s over for the MMA industry. UFC will be the only one left. We’re the last chance. Otherwise, fighters’ purses will go down if UFC is the only one – is the only one period. We’re Luke Skywalker and UFC is Darth Vader and the Death Star.” Coker Dep., Exh. 8; Coker Dep. at 95:10-20.

127. ZUF-00085896.

128. *Id.*

129. Coker Dep. at 121:10-23 (“I believe that the phone started ringing from Dana [White] because we had signed [prominent heavyweight] Fedor [Emelianenko] and we announced the heavyweight tournament. It was clear that although we were a very small company, much smaller than the UFC, but we were in the same business, that we had a better heavyweight division than they did, and I think that was one of the considerations on their part.”). Coker also testified that the light heavyweight division has always been the “strongest in MMA” and “heavyweights, to me, would be just as important because everyone likes the heavyweights.” *Id.* at 106:2-9.

130. Coker Dep. at 114:22-118:15.

would like to buy [Strikeforce].”¹³¹ For its part, Zuffa’s internal correspondence in 2012 indicates that the UFC sought, by its Strikeforce acquisition, to eliminate it as a competitor. In a conference call, UFC CEO Lorenzo Fertitta stated that: “Lawrence and Pete Dropick, who run Strikeforce for us, went back to New York, had negotiated a separation agreement with Showtime to essentially shut Strikeforce down. We would then pull all of those Fighters into the UFC which is essentially what we want to do anyway.”¹³² According to Zuffa, acquiring Strikeforce’s Fighter contracts was “definitely the most important” aspect of the deal.¹³³

50. According to Scott Coker, Strikeforce’s founder, Lorenzo Fertitta stated that his plan was to “close [Strikeforce] down, and we would take all of the Fighters and bring them to the UFC.”¹³⁴ Coker testified that, after negotiations stalled, Dana White threatened that he would “come after [Strikeforce’s] fighters, and he would make our life hard, and, you know, give us a bad time.”¹³⁵ Coker testified that, had Strikeforce not been sold to Zuffa, Strikeforce “would have continued to become a stronger competitor to the UFC.”¹³⁶

51. Record evidence indicates that the Zuffa continues to seek out potential rivals to acquire and shut down. A March 2015 email from Marshall Zelaznik, UFC’s President of UK Operations, asks outside counsel to reach out to the University of MMA, an upscale amateur promotion based in Los Angeles, stating “Let’s put on our to acquire list.”¹³⁷

131. *Id.* at 118:16-23.

132. ZFL-1901788 at 94. Zuffa was interested in bringing in talent such as Ronda Rousey from Strikeforce into the UFC brand. *Id.*

133. Epstein 30(b)(6), 12/2/2016 174:5-18; *see also* Silva Dep. at 316:9-22.

134. Coker Dep. at 119:9-17.

135. *Id.* at 128:9-14; Coker Dep., Exh. 8 (ZUF-00447778).

136. Coker Dep. at 144:12-15

137. ZFL-2530953 at 53.

2. Counter-Programming and Litigation

52. Record evidence shows that the UFC engaged in counter-programming in attempts to suppress demand for events of other MMA promoters. According to one academic case study:

The UFC had a simple strategy for limiting the growth of its competitors; it scheduled free counter-programming at the same time as their competitors with the intention of stealing revenues. And although this approach was not profitable in itself, it worked by preventing new competitors from both achieving profitable operations and recouping their investments in high-profile fighters.¹³⁸

That Zuffa's counter-programming was "was not profitable in itself"¹³⁹ indicates that the economic motivation of Zuffa's counter-programming was to use its dominance to harm competition by impairing rivals in an anticompetitive manner, rather than to promote competition in the industry.

53. The UFC's counter-programming appears to have been conceived in 2006 when the UFC sought to counterprogram the WFA's last event before they purchased the promotion. On June 15, 2006, Kirk Hendrick wrote to Lorenzo Fertitta, Dana White and Craig Borsari that Spike had agreed to air a taped compilation of UFC bouts on July 22, 2016 (the date of the WFA's last event).¹⁴⁰ Hendrick wrote: "Obviously, the idea would be: 'free UFC on Spike TV ... versus whatever WFA charges for PPV.'"¹⁴¹ A few years later, on November 24, 2008, Craig Borsari wrote that "Dana [White] wants to counter program Affliction[']s pay-per-view event on] January 24 [2009]" with a re-run of a prior pay-per-view event on free television.¹⁴² UFC President Dana White openly admitted to counter-programming in a May 2009 ESPN article, according to which, White had "thrown together the card [for Saturday's Fight Night 14] in five weeks in an attempt to

138. Jesse Baker & Matthew Thomson, *The Ultimate Fighting Championships (UFC): The Evolution of a Sport*, in CASES IN MARKETING MANAGEMENT 115 (Kenneth E. Clow & Donald Baack, eds. 2012).

139. *Id.*

140. ZUF-00153787.

141. *Id.*

142. ZUF-00153903. Zuffa did, in fact, broadcast the re-play of the UFC 91 pay-per-view card, bringing in an average audience of 2.3 million viewers for the special. *See UFC 91 replay on Spike TV peaks with 3.3 million viewers*, MMAmania.com, Jan. 27, 2009, available at <https://www.mmamania.com/2009/01/27/ufc-91-replay-on-spike-tv-peaks-with-33-million-viewers>. Affliction did not have another event after its January 24, 2009 event.

choke out a dangerous upstart promoter, Affliction, which is staging its first event.”¹⁴³ White clarified that “I’m doing this fight for one reason, to make Affliction spend money. If they’re in business in January, I’ll be horrified.”¹⁴⁴

54. In May 2014, an internal UFC email string was circulated regarding a Live MMA Event promoted by MMA promoter Bellator that was to take place at a venue fewer than ten miles away from a UFC event on the same date. UFC Senior VP Peter Dropick wrote:

Bellator just announced a Live MMA Event featuring Brennan Ward vs James Irvin at Mohegan Sun in CT on Sept 5th, the same night as our FS1 event at Foxwoods (10 miles down the road). It looks like Bellator goes on-sale June 6. I spoke to Felix at Foxwoods and they’re still 110% committed. Any issues moving forward as planned? I think we should announce our event before their on-sale. We’ll crush them at the gate.¹⁴⁵

In response, UFC CFO John Mulkey replied: “Let’s price it right and scare them out of town.”¹⁴⁶ Scott Coker, President of Bellator, filed a declaration stating that “UFC has frequently counterprogrammed Bellator’s events—for example by choosing venues or scheduling high profile matches to draw audience away from Bellator’s own key matches.”¹⁴⁷

55. UFC also noted that counter-programming was a part of its strategy in a presentation to potential sponsors.¹⁴⁸ In February 2009, Dana White forwarded a press announcement about Showtime’s agreement with Strikeforce to other Zuffa executives, asking

143. Michael Woods, *UFC struggles to shake outlaw nature*, ESPN, May 12, 2009, available at <http://www.espn.com/extra/mma/news/story?id=4157485>. In a November 2008 email, Vice President of Operations Craig Borsari wrote to Lance Klein and Assistant General Counsel Kirk Hendrick that “Dana wants to counter program Affliction on January 24 and would like to run a UFC 91 special featuring fights from the PPV including Brock vs Randy. Can you talk to Kevin about licensing this program? I know its [sic] unlikely that they’ll pay a big number for the show but it would be nice if we could at least get our production costs covered.” ZUF-00153903.

144. *Id.*

145. ZFL-0827209.

146. *Id.*

147. Declaration of Scott Coker in Support of Nonparty Bellator Sport Worldwide, LLC’s Motion to Quash or Modify Subpoenas, Feb. 22, 2017, ¶20 [hereafter, “Coker Declaration”]. *See also* Coker Dep. at 37:12-38:15 (confirming that Zuffa’s counterprogramming of Strikeforce).

148. A September 2010 PowerPoint presentation to Sports Authority notes that “UFC Counter-Programming consists of re-run pay-per-view events and re-run bouts.” *See* ZUF-00169647.

“are we going to counter program this on Spike?”¹⁴⁹ An August 14, 2009 email from Joe Silva to Dana White and Lorenzo Fertitta states: “I have stolen the following fights out from underneath Strikeforce in the last couple of days: Joey Villaseñor[,] Riki Fukuda[,] Joey Villaseñor[,] [sic] Phil Baroni[,] Dennis Hallman[.]”¹⁵⁰

56. Explosion Entertainment, which owned Strikeforce, wrote in its 2009 business plan that Strikeforce and other MMA promoters were increasingly “wary of UFC’s predatory instincts and counter-programming clout.”¹⁵¹ It further noted that UFC’s “arrogance has spawned business practices that can be viewed as anti-competitive and restraints of trade.”¹⁵² In a 2010 presentation discussing the future of the company, one of the potential options was to “Go Hard after the UFC” as opposed to becoming an MMA “minor league.”¹⁵³ One element under the “con” section of plan was the threat of “UFC counter-programming (awake the sleeping giant).”¹⁵⁴ A March 3, 2010 email chain among Strikeforce executives expresses concern about UFC counter-programming Strikeforce’s April 17, 2010 Nashville event, and even considers attempting to preemptively reserve event venues in the metropolitan area.¹⁵⁵ At the time, Andrew Ebel at Strikeforce noted internally that “I really feel that the potential of UFC holding an event in Nashville was and is

149. ZFL-2005388.

150. ZFL-2005616.

151. ZUF-00421380 at 386.

152. *Id.* at 387.

153. ZUF00447547 at 570.

154. ZUF00447547 at 562.

155. This idea was later abandoned as impractical due to the high number of potential venues. *See* ZFL-2595178; *see also* ZFL-2586870, March 6, 2010 email from Andrew Ebel at Strikeforce (“UFC is playing dirty and may be trying to put on a live MMA event in a different venue in Nashville on the same night as ours. We need to get our media booked immediately so they don’t come in and literally buy up all the available media in the marketplace. We need to move very quickly. This is very serious.”).

really hindering our ticket sales to date.”¹⁵⁶ UFC ultimately counter-programed the event by rebroadcasting UFC 110 on Spike at the same time as the Strikeforce event.¹⁵⁷

57. One UFC estimate indicated that UFC counter-programming could reduce Strikeforce’s viewership by as much as 40 percent.¹⁵⁸ Zuffa created a PowerPoint presentation comparing viewership of Strikeforce live events with its counter-programmed recorded events in 2010.¹⁵⁹ In April 2010, Sam Raimist, a financial analyst for Zuffa, sent an email to Zuffa executives comparing ratings between Strikeforce and Zuffa events: “Overall UFC110 had a good showing as a replay going up against a live event. In comparison to other shows we have used to counter-program our competition, such as UFC107 and UFC100, UFC110’s numbers are slightly down.”¹⁶⁰

58. Zuffa also targeted other MMA promoters. Jeremy Lappen, once the president of fight operations at ProElite (which owned subsidiaries EliteXC, Cage Rage, and King of the Cage) testified that UFC at various times counter-programmed Live MMA Events.¹⁶¹ In 2014, CEO of Cage Warriors Graham Boylan complained to Garry Cook at the UFC about UFC counter-programming and suggested coming to a confidential agreement not to hold events in same area on

156. See ZFL-2587231.

157. See <http://www.fightline.com/fl-news-2010-0417-487130-strikeforce-> (“Although the UFC will not counter Strikeforce’s second CBS primetime broadcast with a live show of their own tonight, MMA’s monopoly will air November’s “UFC 110: Nogueira vs. Velasquez” event on Spike TV to try and retain their stranglehold on the sport.”).

158. A May 2010 email from Sam Raimist notes: “Please find attached the ratings breakouts for Saturday’s Strikeforce event on Showtime, and our counterprogramming, UFC Ultimate Fights.” A follow-up email compares ratings for the counterprogrammed Strikeforce on Showtime event “to their last Showtime Event held in January,” and notes that “Overall viewership from the January event to last Saturday’s was down 40%. Strikeforce also saw significant drops in all of the demos,” to which Zuffa’s John Mulkey responds, “ouch[.]” ZFL-1677482 at 82-83.

159. ZFL-2022954 at 55.

160. ZUF-00339684.

161. Deposition of Jeremy Lappen, Feb. 28, 2017, at 44 (“Q: Do you remember a specific time when another promotion counter programmed to one of your events? A: I don’t remember the specific times, but I know that the UFC counter programmed our events. Q: Would you say that happened often while you were president of fight operations? A: I don’t remember how often it happened. It happened more than once. But I don’t remember how many times. Q: Did any other MMA promoters counter program Pro Elite events? A: Not that I remember.”).

same dates: “I’d like to reach out in confidence and ask if you want to work on not clashing?” Cook responds “We need to have a conversation about this when you get a chance.”¹⁶²

59. Record evidence indicates that Zuffa also used the threat of litigation to impair would-be rivals. For example, IFL was an atypical MMA promoter in that matchups were team affairs, with each team member facing off in a one-on-one bout.¹⁶³ IFL held 22 events across the United States between 2006 and 2008.¹⁶⁴ It collapsed due to financial difficulties (in part, as discussed below, due to the Challenged Conduct) in 2008.¹⁶⁵

60. Before IFL had put on its first promotional Live MMA Event, Zuffa sued it, alleging that the fledgling company had illegally hired some of its former employees who took with them confidential trade secrets.¹⁶⁶ IFL co-founder Kurt Otto at the time stated that:

Rather than having to do with “confidential” information or purported trade secrets, I believe that, to the contrary, as described below, this lawsuit has everything to do Zuffa’s effort to stifle and stamp out perceived competition in the Mixed Martial Arts (“MMA”) marketplace in a transparent attempt to put the IFL out of business before it ever gets off the ground.¹⁶⁷

IFL counter-sued over allegations that UFC had threatened Fox Sports with a lawsuit if Fox were to sign a deal with IFL.¹⁶⁸ Both cases generated substantial legal expenses for IFL.¹⁶⁹

162. ZFL-2483111 at 13.

163. Jonathan Snowden, *Disastrous debut costs IFL millions: The history of MMA on television, Part 2*, BLEACHER REPORT, Dec. 12, 2012, available at <http://bleacherreport.com/articles/1442316-disastrous-debut-costs-ifl-millions-the-history-of-mma-on-television-part-2>.

164. See <http://www.sherdog.com/organizations/International-Fight-League-742>.

165. IFL’s assets were acquired by HDNet. See IFL SEC Form 10-K (2009), at 1 (“On November 17, 2008, IFLC sold substantially all of its assets to HDNet LLC...”). See also Tom Ngo, *IFL: Going, Going...Gone! UFC Here We Come?*, 5TH ROUND, July 25, 2008, available at <https://web.archive.org/web/20091201045527/http://www.5thround.com/07252008/news/1293/ifl-going-goinggone/>.

166. Jeffrey Thaler, *Breaking Down the Match-Up: UFC vs. IFL*, SHERDOG, Mar. 2, 2006, available at <http://www.sherdog.com/news/articles/Breaking-Down-the-MatchUp-UFC-vs-IFL-4051>.

167. Deposition of Kurt Otto, February 6, 2017, Exhibit 6, ¶ 4.

168. Thaler, *supra*.

169. Deposition of Kurt Otto, February 6, 2017, at 161.

61. The lawsuit also generated sworn statements from Patrick Miletich, a MMA trainer and former UFC champion, who testified that UFC's President Dana White threatened him and others that individuals doing business with IFL would forfeit future opportunities with the UFC. In two separate instances, White allegedly stated that "he was going to fucking crush these [the IFL] guys," and that "when the dust settles, anyone associated with the IFL would not be associated with the UFC."¹⁷⁰ Miletich further stated that White's statements represented:

[A] threat to me and to my fighters who count on me to represent them and obtain opportunities for them to fight in the MMA industry. Because of the virtual monopoly that Zuffa has in the MMA industry, Mr. White clearly knew that cutting me and my fighters off from the UFC would have a devastating economic impact...

Knowing Mr. White the way I do, I can honestly say that Zuffa's intent in bringing this litigation has nothing to do with protecting any confidential information. Rather, I believe this litigation is about one thing and one thing only—stamping out legitimate and, indeed, healthy, competition.¹⁷¹

3. Non-Compete Agreements With Other MMA Promoters

62. Record evidence indicates that Zuffa has entered into non-compete agreements with other MMA promotions or their principals. In November 2010, Zuffa entered into a settlement agreement with HDNet LLC and Mark Cuban resolving a dispute over distribution rights. The settlement agreement included a "NON-COMPETITION" clause stating that "HDNet and Mark Cuban would not engage in direct competition with Zuffa's line of business until November 9, 2014."¹⁷²

63. There is also evidence suggesting that Zuffa and other MMA promoters sometimes worked together to prevent Fighters from fighting bouts with other MMA promoters. During Zuffa's negotiations regarding the acquisition of MMA promoter, Pride, Pride's management

170. *Pat Miletich's Statement in UFC-IFL Case*, MMAWEEKLY, June 17, 2006, available at <http://www.mmaweekly.com/pat-miletichs-statement-in-ufc-ifl-case>.

171. *Id.*

172. ZFL-1225776 at 78.

offered to sign an exclusive contract with a well-known champion Fighter, Fedor Emelianenko, to “keep him away from Bodog [a rival promoter] so the contract is exclusive ... depending on what you [Zuffa] want.”¹⁷³ In a February 2013 email to UFC CEO Dana White titled “heads up,” Shannon Knapp, the president of Invicta (another MMA promotion) wrote, “I wanted to let you know that we signed Zoila Frausta Gurgel (Bellator’s 125lb champion) exclusively away from Bellator. We are not working with them or sharing talent with them. I always like to keep you in the loop so you know what is real.”¹⁷⁴

B. Nature of the Vertical Conduct

64. Zuffa’s long-term exclusive PARs with Fighters constitute the primary vertical component of the Challenged Conduct. My staff and I reviewed all Zuffa Fighter contracts produced by Zuffa; this includes a total of 2,136 valid PARs spanning 2001-2015.¹⁷⁵ As explained below, Zuffa’s long-term exclusive PARs barred Fighters from fighting for any other MMA promoters for the duration of the PAR. In addition, Zuffa’s PARs have long contained a variety of provisions permitting Zuffa to extend the duration of Fighter contracts unilaterally, which could and did extend contracts beyond the stated “term” for many additional months or years, or indefinitely. For example, when Fighters announce retirement or injury, their contracts are tolled until their next fight for Zuffa, which might never happen.

65. Economists and antitrust practitioners recognize that vertical restraints such as these, when used by a dominant firm, can harm competition by blocking or impairing access to key inputs, thereby foreclosing firms that would otherwise provide competitive discipline to the

173. ZUF-00031544.

174. ZFL-1019758.

175. *See* Appendix, Table A1. Excludes two non-Zuffa contracts (from Invicta and EliteXC) that were also produced by Zuffa.

dominant firm. By making it difficult or impossible for would-be rivals to acquire key inputs, such conduct restricts or eliminates the would-be rival's output, revenue, and ability to compete effectively.¹⁷⁶

1. Exclusive Fighter Contracts Prohibit Fighters from Working with MMA Promoters other than Zuffa for the Often Lengthy Duration of the Contracts

66. While under a PAR, a Fighter is subject to an "exclusion clause" that requires the Fighter to fight exclusively for Zuffa, and prohibits the Fighter working with other MMA promoters.¹⁷⁷ Zuffa's PARs function as one-way ratchets, giving Zuffa unilateral authority to bind Fighters to exclusive terms or to cut Fighters that lose even a single bout (the "Cut Clause").¹⁷⁸ (In this sense, they differ qualitatively from contracts such as apartment leases or sports contracts in the NBA or MLB, which typically bind both parties to a specified term and/or amount). Virtually all of Zuffa's PARs also contain an ancillary clause granting Zuffa exclusive control over Fighters' Identity rights in perpetuity.¹⁷⁹

176. MODERN IO, *supra*, at 371-375; *see also id.* at 429-430; Salop, *supra*.

177. *See* ZFL-0506593, ZFL-0175016, ZFL-0132594, ZFL-0469456, ZFL-0086231. *See also* ZFL-1544038 at 58 (2012 Information Memorandum prepared by The Raine Group stating that "[a]ll fighters are signed exclusively to the UFC"). Prior to its acquisition by Zuffa, at least some Strikeforce contracts were "not exclusive and allow[ed] the fighters to have bouts elsewhere." *See* ZFL-1393175. *See also* 30(b)(6) Deposition of Kirk Hendrick, November 29, 2016, Exhibit 2, at 21-25 [hereafter *Zuffa Contract Summary*], at 3. The PAR did permit Fighters to compete in certain bouts, providing that the bout was not televised and that the Fighter obtained Zuffa's express written permission. Ex. 2 to Hendrick Dep. at Tabs 29-50 (demonstrating in Section 3.6 the lone exception to the contractual bout exclusivity provision). Because Zuffa could deny its permission, Zuffa could ensure a Fighter never defected to a rival that Zuffa perceived to threaten its market dominance.

178. *Zuffa Contract Summary* at 140, 204, 844. *See also* DB-ZUFFA-00020303 at 04 ("the UFC reserves the right to terminate a fighter's contract after one or two consecutive losses").

179. *Zuffa Contract Summary* at 21-25. *See also* ZFL-1382453 at 80 ("Fighter grants unrestricted worldwide right [to] use, edit, disseminate, display and/or reproduce the name, likeness, sobriquet, voice, persona, signature and/or biography ("Identity") of the Fighter. Zuffa owns rights in perpetuity throughout the world. These rights include right to include likeness in any Zuffa-branded video games. This right is exclusive for most fighters.").

67. Nearly all of Zuffa's PARs specify a term in both bouts and months, which covers the period when the Fighter is eligible to fight in a Zuffa promoted event.¹⁸⁰ The contracts are structured such that the PARs would enter their final phase at either the end of the final bout or the end of the final month of the contract, whichever comes first.¹⁸¹ Zuffa precludes Fighters from fighting for other MMA promoters from the date their contracts were signed (even though the time period of the defined "term" does not begin until the first fight), which means that the PAR is also in effect during any time elapsing between the signing of a Fighter's contract and the Fighter's first bout—a period that, as I understand it, can sometimes extend for months.¹⁸²

2. Zuffa's Exclusive Contracts with Fighters Permit Zuffa to Extend the Duration of the Contracts

68. All PARs contain a right to match clause, which "grants Zuffa the right to match competing promoters' offer for limited period of time after the expiration of an athlete's agreement."¹⁸³ In approximately 95 percent of contracts I reviewed, the right to match period lasts for one year.¹⁸⁴ If another MMA promoter attempts to sign a Fighter during the right to match period, the Fighter must share the terms of that offer to Zuffa, and Zuffa can elect to retain the Fighter simply by matching the terms offered by the other MMA promoter. The potential rival

180. *See, e.g.*, ZFL-0506593 §5.1: "The duration of Promotional Rights ("Term") shall commence on the Effective Date and end on the earlier of (i) Fifteen (15) months after the first bout promoted Zuffa involving Fighter under this Agreement; or (ii) the date on which Fighter has participated in at least three (3) Bouts promoted by ZUFFA under this Agreement ("Termination Date"), unless terminated sooner or extended further pursuant to the provisions of this Agreement."

181. *Id.*

182. *See, e.g.*, ZFL-0506593 §5.1 ("end on the earlier of (i) Fifteen (15) months *after the first* bout") (emphasis added). Compare to ZFL-0417369 §5.1 ("end on the earlier of (i) twenty eight (28) months after the Effective Date of this Agreement").

183. *Zuffa Contract Summary* at 8. *See also* Appendix, Table A1.

184. *See* Appendix, Table A1. *See also* Hendrick 30(b)(6) V.I Tr. 123:8-19 (confirming that "some version or another of the right to match has been in virtually all of Zuffa's contracts with its fighters ... for the entire relevant time period").

cannot counter with a better offer, as the Fighter is contractually obligated to accept Zuffa's matching terms.¹⁸⁵

69. Virtually all (about 94 percent) of Zuffa's PARs contain a champion's clause.¹⁸⁶ If a Fighter becomes a title-holding champion at any point during the term the contract, the champion's clause automatically extends the Fighter's contract "for one year from the Termination Date or until the date on which the athlete has participated in three bouts promoted by Zuffa."¹⁸⁷ The champion's clause ensures that the most successful Fighters remain exclusive to Zuffa at a point in time that would otherwise translate into substantially increased marketability to competing MMA promoters and thus greater bargaining leverage for the Fighter. As a 2009 Deutsche Bank Report noted, "the UFC typically has the right to retain athletes who hold a championship title in any weight class at the expiration of their contract for one additional year, thereby ensuring that the Company continues to benefit from such a Fighter's potential popularity through additional promotions and events."¹⁸⁸ Deutsche Bank's designee testified that Zuffa told Deutsche Bank, when Deutsche Bank was preparing materials for potential buyers of Zuffa's debt, that the contractual provision that provided Zuffa "the ability to retain champions for an additional year

185. *Zuffa Contract Summary* at 66 ("Fighter shall not accept any offer...with any other promotional entity during the Matching Period without complying with this section. Prior to acceptance of any Offer made during the Matching Period, Fighter shall first deliver to ZUFFA a written notice of all material financial terms and conditions of the offer, including, but not limited to, the identity of the promotional entity making the offer. Such notice shall constitute an exclusive, irrevocable offer (the "ZUFFA Offer") to contract with Zuffa on the same financial terms and conditions.").

186. *See* Appendix, Table A1. *See also* Hendrick 30(b)(6) V.I Tr. 120:11-16 ("I would say a version or some variations to it has a championship clause in almost all of our promotional agreements.").

187. *Zuffa Contract Summary* at 4.

188. ZUF-00162329-382 at 361. *See also* DB-ZUFFA-00006389 at 392 (repeating same characterization in 2012).

after their contract expires was part of how [the UFC's contracts with Fighters] were designed to retain talent with [the UFC].”¹⁸⁹

70. All of Zuffa's PARs also contain a retirement clause.¹⁹⁰ The retirement clause permits Zuffa to suspend a Fighter's contract indefinitely.¹⁹¹ This prevents Fighters from coming out of retirement to fight for rival promoters, even many years after retirement.¹⁹² If a Fighter declared that he or she was retired before fighting the requisite number of fights in his or her contract, he or she would still owe Zuffa those fights if and when he or she decided to come out of retirement.

71. All of Zuffa's PARs contain a promotion clause.¹⁹³ The promotion clause grants Zuffa the “exclusive unrestricted worldwide right to promote any and all mixed martial arts contests during the Term.”¹⁹⁴ The promotion clause also allows Zuffa to extend a Fighter's contract term in the event that the Fighter refuses an opponent.¹⁹⁵ Zuffa has sole control over the opponent to offer a Fighter.¹⁹⁶

189. Goldman 30(b)(6) Tr. 72:17-24.

190. See Appendix, Table A1. See also Hendrick 30(b)(6) V.I Tr. 121:12-24 (“There is a retirement provision in, to my knowledge, all of our agreements.”).

191. See *Zuffa Contract Summary* at 9 (“The retirement clause allows Zuffa to extend, accelerate or fulfill its obligation to promote bouts if athletes retire before their agreements with Zuffa terminate This provision was designed to prevent an athlete from manipulating an agreement by retiring and then re-signing with another promoter The retirement clause has existed in Zuffa agreements since the time that Zuffa purchased the UFC.”).

192. See ZFL-0486365 at 72 (“If at any time during the Term Fighter decides to retire from mixed martial arts or other professional fighting competition then ZUFFA may, at its election, (i) suspend the Term for the period of such retirement; (ii) declare that ZUFFA has satisfied its obligation to promote all future Bouts to be promoted by ZUFFA hereunder without any compensation due to Fighter therefor; or (iii) elect to provide Fighter with notice of an Acceleration.”).

193. See Appendix, Table A1.

194. The promotion clause also requires athletes under contract with Zuffa to cooperate in the promotion of upcoming bouts. This includes pre-bout interviews, press conferences, weigh-ins, and appearances to sell merchandise. ZFL-1382453 at 80. See also *Zuffa Contract Summary* at 6, and at 47-59.

195. See *Zuffa Contract Summary* at 6 (“[i]n 2012 the promotion clause clarified that limited extension to the length of the agreement was possible in the event an athlete refuses an opponent”). See also Deposition of Joseph Silva at 125:20-126:22.

196. See *Zuffa Contract Summary* at 48.

72. Zuffa's contracts also contained tolling provisions that "allow Zuffa to extend the Term of an agreement for the period of time that an athlete is unable or unwilling to compete in a UFC bout," to cover situations such as injuries or if a Fighter believes an opponent being offered is unacceptable or inappropriate, or if a Fighter simply wants out of his or her contract in order to fight for another MMA promoter.¹⁹⁷

73. Except for contracts signed during the years 2011-2014, nearly all Zuffa PARs include an exclusive-negotiation clause,¹⁹⁸ which requires Fighters to negotiate exclusively with Zuffa for renewal of their contracts for a period of 30 to 90 days.¹⁹⁹ Zuffa removed this clause halfway through 2011, but reinstated the clause in early 2014.²⁰⁰

3. Other Vertical Restraints

74. Zuffa's contracts with Fighters prevent other MMA promoters from using clips of Fighters' past fights to promote Fighters who had left the UFC.²⁰¹ In contrast, Zuffa itself

197. *Zuffa Contract Summary* at 7; *see also* Hendrick 30(b)(6) V.I Tr. 197:12-198:8 (testifying on behalf of Zuffa that such a provision appears "in the majority of [Zuffa's contracts with fighters]..."); Silva Dep. at 275:9-24, 276:8-18 (confirming that Zuffa's contracts include provisions that toll the agreement for any period that a fighter is injured, retired, or otherwise unable or unwilling to appear in a bout).

198. *See* Appendix, Table A1.

199. *Zuffa Contract Summary* at 8. *See also* ZFL-1941439 (letter demanding a halt to negotiations within the exclusive negotiation period).

200. *Zuffa Contract Summary* at 65. About ten percent of Zuffa contracts also contain an "option period" that allowed Zuffa to, in its sole discretion, renew the initial term (in bouts and months) of the contract at the end of a Fighter's contract a set number of times—effectively doubling or tripling a contract's effective length. *See, e.g.,* ZFL-0050050 at 6 ("Fighter hereby irrevocably grants Zuffa two (2) separate one year-option periods (each referred to herein as an "Option Period") to extend the duration of this Agreement including all of Fighter's obligations hereunder... ZUFFA shall have been deemed to have exercised any applicable Option Period unless ZUFFA notifies Fighter in writing of ZUFFA's intent not to exercise a certain Option Period by thirty (30) days prior to the commencement of the applicable Option Period... Zuffa shall provide Fighter with the opportunity to compete in at least three (3) Bouts during the Initial Period and during each Option Period that ZUFFA chooses to exercise..."). *See also* Appendix, Table A1.

201. Silva Dep. at 59:5-13 (discussing May 2007 Confidential Information Memorandum, DB-ZUFFA—00006712) ("Q. Then it [the 2007 Confidential Information Memorandum] says: 'The UFC's complete control and ownership of its content also discourages competing organizations from soliciting UFC fighters by restricting ability market prior fights for promotional purposes?' Is that fair? Do you agree with that?...THE WITNESS: Yes."); Goldman 30(b)(6) Tr. 118:5-21 (discussing 2009 Confidential Information Memorandum as Deutsche Bank's designee) ("Q. Can you read the last sentence in that paragraph? A. The UFC's complete control and ownership of its

preserved the right to use clips from its rivals in its standard Fighter contracts.²⁰² Zuffa also entered into exclusive sponsorship contracts, pursuant to which Fighters could not leave the UFC to fight for another MMA promoter without also losing their sponsorships.²⁰³ Zuffa also warned Fighters not to sign over their likeness to other MMA Promoters.²⁰⁴ Zuffa also entered into agreements with venues, sponsors, and broadcasters requiring that these entities not do business with other MMA promoters as a condition for doing business with Zuffa.²⁰⁵

content also discourages competing organizations from soliciting UFC fighters by restricting their ability to market prior fights for promotional purposes. Q. Did Zuffa tell Deutsche Bank in 2009 that its complete control and ownership of its content discourages competing organizations from soliciting their fighters? A. Once again, the fact that UFC owns and has full control and ownership of their contents [sic] could have led us to the interpretation that, you know, other organizations couldn't solicit their fighters. So if [sic] could have been that they had that in discussions. It could have been that they just provided us with material and we made the ... assumption. Q. So either Deutsche Bank or Zuffa made that conclusion? A. Correct. Q. And that's how it ended up in this document? A. Correct. Q. And Zuffa had the opportunity to edit it and did not? A. Correct.”).

202. Zuffa's PARs assert the “non-exclusive right to use a three minute clip of the recording of any prior bout, including any non-ZUFFA/UFC bout, in which Fighter was a participant to the extent that Fighter possesses the rights thereto or can reasonably obtain such rights solely for the purpose of publicizing the Bout...” *See, e.g.,* ZFL-0105053 at 61.

203. *See* Deposition of Michael Mersch, July 14, 2017 at 418:14-24 (“Q. So the fighter's sponsored by one of the UFC's exclusive sponsor and they decide to leave the UFC and go fight for Bellator. As a result of this policy, they couldn't take the sponsor with them if that sponsor wanted to stay with the UFC; is that right? A. Assuming that they had negotiated and agreed to . . . an exclusivity provision in a contract with Zuffa, I would assume and imagine that people who entered the contracts adhered to the terms of the contractors.”).

204. In November, 2009 EA Sports announced the launch of an MMA video game featuring Strikeforce fighters. *See* <https://web.archive.org/web/20091109023530/http://mmajunkie.com/news/16763/strikeforce-to-be-flagship-promotion-in-ea-sports-mma-videogame> *mma* UFC President Dana White responded by “ma[king] it clear that any fighter who signs over their likeness to the new project will be blacklisted from the UFC,” and explained that “fighters who sign contracts to appear in EA Sports' upcoming MMA title ‘will find themselves out of the UFC's good graces.” *See* ZUF-00335242.

205. Zuffa entered into agreements with sponsors requiring the sponsor “not to sponsor any other competitive mixed martial arts (MMA) leagues, promoters, fighters, and/or affiliated brands... during the Term without the express written consent of Zuffa.” *See, e.g.* Epstein Exh. 32 (ZFL-1233191) at 192 (SAN Nutrition); Epstein. Exh. 35 (ZFL-2532557) at 559 (Body Plus). As Michael Mersch explained to one potential sponsor in August, 2010, “We are transitioning everyone to exclusivity with Zuffa promoted fighters only.” Epstein Exh. 42 (ZFL-2149052), Epstein 30(b)(6) Dep. at 338:5-339:11. *See* ZFL-1835118, showing venue exclusion of all other MMA organizations as a condition for hosting a Zuffa event. *See also* ZUF-00090606, ZFL-2540458, and ZFL-1978914. *See* ZFL-2203067, showing sponsor exclusion of all other MMA organizations as a condition for sponsorship. *See also* ZFL-1224976, ZFL-1225565, ZFL-1226920, ZFL-1229603, ZFL-12439917, ZFL1219068, ZFL-2489547, ZFL-12449538, ZFL-2251021, ZFL-2251267, ZFL-2251268, ZFL-12442377, ZFL-2534622, and ZFL1219068. *See* ZFL-2614046, showing broadcaster exclusion of all other MMA organizations as a condition for airing UFC footage. *See also* ZFL-2502942, ZFL-1499215, ZFL-1702118 ZUF-00088096, ZUF-00088100, ZFL-1977394, and ZFL-2618630.

C. Zuffa Exploited the Exclusionary Terms of the PARs to Make Exclusion Effectively Perpetual

75. Zuffa exploited the exclusionary terms of the agreements to renew and extend Fighter contracts, and to stagger them such that, to the extent any would ever expire, there would never be a critical mass of Fighters available to a potential rival at any one time. From the standpoint of Fighters’ relatively short careers, this allowed Zuffa to make its exclusionary provisions effectively perpetual for those Fighters whom Zuffa wanted to keep. As Zuffa management stated categorically in a 2016 due diligence document, “...no athlete has left the UFC that the Company wanted to retain.”²⁰⁶ These practices—combined with Zuffa’s market power, and other exclusionary practices discussed in Part III—ensured that MMA promoters could not compete effectively with Zuffa, and therefore could not significantly discipline Zuffa’s market power or provide a robust competitive alternative to Fighters in their negotiations with Zuffa.

1. Zuffa Exploited the Exclusionary Terms to Extend and Renew Fighter Contracts

76. Zuffa exploited various forms of bargaining leverage made possible by the Fighter agreements and the other Challenged Conduct to restrict the quantity and quality of employment opportunities for its Fighters. This created powerful incentives for Fighters to renew their contracts before the prior contracts expired, on terms favorable to Zuffa. And Zuffa, in fact, made a practice of using its leverage to approach those of its Fighters it wanted to keep before the last fight of their contracts, so that Zuffa contracts rarely reached their end. Among other things, Zuffa could and did (1) impose (or credibly threaten to impose) delays between bouts, particularly before the final bout

206. CG-UFC-00000005 (Item 204). *See also* Deposition of Joseph Silva at 59:14-20 (discussing May 2007 Confidential Information Memorandum, DB-ZUFFA—00006712) (“Q. Then it says: ‘Notably, only one marquee fighter has ever defected from UFC to a competing MMA organization, and that individual later returned to compete in the U.S.’ As of the date of that statement, is that accurate to your knowledge? A. To my knowledge.”).

of a Fighter's contract, during which Fighters—who get paid only when they fight—could not earn MMA income from any source; (2) pair (or credibly threaten to pair) Fighters against suboptimal opponents or on unfavorable positions on a Fight Card; (3) lock up the most valuable Fighters at the peak of their popularity by leveraging the presence of the champion's clause; and, (4) impose and enforce lengthy periods even after a Fighter had competed all of the bouts in his or her contract, during which the Fighter would not be allowed to negotiate freely or without restriction with other MMA promoters for the opportunity to fight for another MMA promoter.

77. Zuffa exercised significant discretion over the timing of bouts in a Fighter's contract.²⁰⁷ Record evidence indicates that Zuffa's ability to control the timing of a Fighter's matchups, the identity of opponents, and a Fighter's placement on the Fight Card conferred a negotiating advantage, particularly given that members of the Bout Class were compensated only when they fought.²⁰⁸ The ability to force a Fighter to wait longer before the final bout (also the Fighter's next payday) incentivizes the Fighter to agree to Zuffa's terms for a new contract even if he or she preferred to fight for another MMA promotion or merely wanted to test his or her worth in "free agency."²⁰⁹

207. Deposition of Denitza Batchvarova, Zuffa's Senior Vice President of Strategy, January 25, 2017, at 36:7-11 ("Q. And just to make sure I understand what you are saying correctly, so the UFC has discretion on how to structure the card and wanted to maintain that discretion? A. Yes. Yes.").

208. Deposition of Plaintiff Kyle Kingsbury, February 17, 2017 at 18 ("[T]hrough threats and direct punishment, Dana really controlled how our careers went. And he could stick you on the undercard in your next fight against some unfavorable opponent. If you're on the undercard, you would make far less. If anything in sponsorship because you weren't on TV. He might sit you on the bench for a while. That's happened to numerous fighters. And then give you an unfair brutal opponent on an undercard. There were a number of different ways that Dana would use his power to our disadvantage."). *See also* Silva Dep. 405:12-19 ("Q. So everything's equal. And the only thing you know now is that this guy's main card worthy and he has agreed to re-up, versus, it's the same situation, main card worthy where he's not agreed to re-up. You'd more likely give the main card in a better position to the guy who has agreed to re-up as opposed to the one who hasn't; right? A. Yes."); ZFL-2496215 (July 2012 e-mail exchange between Joe Silva, Michael Mersch and Tracy Long discussing the fact that it was Quinton Rampage Jackson's last fight on his contract, would not sign a new deal and that Zuffa used its discretion to not make Jackson's bout the main event).

209. Deposition of Plaintiff John Fitch, February 15, 2017 at 105 ("Q: Okay. And in this case, I think we've established that had you fought two fights [(of three)] and then renegotiated the contract? A: Correct."). *See also id.* at

78. Record evidence indicates that Zuffa typically opened negotiations for a contract renewal before a Fighter's existing contract had expired.²¹⁰ For example, an August 2010 email from Nick Walton from MMAagents notes that "Traditionally, Joe Silva drops the fourth fight and gives a nominal raise as an incentive for re-signing for 4 more fights. This is even usually done when fight three was a loss...."²¹¹ In May 2014, Joe Silva forwarded an article to agent Martin in which Fighter C.B. Dollaway notes "Generally, the UFC negotiates with one fight left on your contract... So, after this fight, I'll be renegotiating."²¹² Silva testified in his deposition that he would "very frequently"²¹³ present a new contract to a Fighter before the last fight in the Fighter's current contract.²¹⁴ Silva wrote in May 2015 "I always renegotiate before the last fight...."²¹⁵

110 ("A: Yeah. I was just pointing out, this is one of the strategies they're using. You can see that fight was March 1, 2008. I hadn't fought since September, so money's running low, I need money, I need to fight. This agreement is sent to me in February; right? So -- oh, wait a minute, that's January. So that's two months before that fight. They're holding my bout agreement hostage. They're holding my next fight hostage until I sign this. They do that often. I think if you look at the other one, you'll probably see that too. Signed 4/6, yes. Signed 5/6, which is May, yeah, so I signed that in May. I fought in June. Q: So you're saying that at that time they were withholding a fight from you until you resigned? A: I'm saying they do that to everybody. We're going to hold your bout agreement until you sign your extension. We won't allow you to become a free agent."). *See also* Deposition of Plaintiff Brandon Vera, February 6, 2017 at 118 ("A: Every time a fighter has -- is coming up on his renegotiation period, it was common knowledge in our industry that if you didn't sign the new agreement, that you were going to get frozen out or put on a dark show so that nobody would ever see your last fight. That's common knowledge across the board.").

210. Deposition of Plaintiff Kyle Kingsbury, February 17, 2017 at 18 ("[T]hrough threats and direct punishment, Dana really controlled how our careers went. And he could stick you on the undercard in your next fight against some unfavorable opponent. If you're on the undercard, you would make far less. If anything in sponsorship because you weren't on TV. He might sit you on the bench for a while. That's happened to numerous fighters. And then give you an unfair brutal opponent on an undercard. There were a number of different ways that Dana would use his power to our disadvantage.").

211. ZFL-2647127.

212. MARTIN0034081 at 81-82.

213. Deposition of Joseph Silva at 322:12-16.

214. *See also* ZFL-1873428 (Audie Attar, Mike Bisping's manager, texts Fertitta in August 2014 saying, "Joe Silva told me to reach out to you and Dana regarding Mike Bisping. He said Mike needs to sign an extension before he books his next fight, because he has 1 fight remaining on his current contract.").

215. ZFL-0977248. Internal Zuffa documents identify the advantages to Zuffa of signing a Fighter to a new contract before letting the prior contract expire. *See* ZFL-2643298 (Joe Silva writes: "it is always a bad position for us to be in counting on that new agreement while time is ticking away on the old one. If they decide not to sign it it [sic] we are in a bad position"). *See also* ZFL-2535654 (Chief Paralegal Tracy Long notifies Sean Shelby that Will Campuzano is on the last fight of his contract (this is information that Long routinely sends to Silva, Shelby, Mersch, Fertitta, Epstein). Shelby: "Wow. I thought I got him. Hang on. Let me get more fights out of him before you send off the bout.").

79. Zuffa had various means at its disposal to ensure that champions, or potential champions, were bound to Zuffa for long periods of time. If a Fighter wanted to contend for a title, Zuffa would first insist that the Fighter to sign a new, longer contract. As Michael Mersch, Zuffa's Assistant General Counsel and Vice President of Business, Legal and Government Affairs, explained in an email to Michael Connette, a representative of UFC Fighter Mark Hunt, Zuffa's contracting practices and provisions allowed it to ensure that successful Fighters were locked up:

[T]he "Extension Term" [of the champion's clause] only comes into play should Mark [an MMA Fighter] complete all fights AND be the champion. I can tell you in my 5 years with the UFC that has never happened because we don't let that happen.

Before someone fights for a UFC Championship we would likely have them locked in a longer term deal. Additionally, if a fighter is successful under a 4 fight deal, we typically negotiate a new agreement after the 3rd fight so he *never will see the end of his contract* and, assuming the fighter is successful, or at least competitive, that is the process that will continue thereafter.²¹⁶

Significantly, Zuffa did not need to invoke *formally* the champion's clause, or any other particular contractual provision in order to cause the Fighter to extend his or her contract. The presence of the contractual terms giving Zuffa the exclusive right to prevent the Fighter from leaving, combined with its contracting practices and market power, was sufficient to prevent the Fighter from leaving or testing his or her value in "free agency." (Even if Fighters could have done so, the viability of "free agency" was constrained by the Challenged Conduct, which created conditions under which other MMA promoters could not offer equivalent or viable competitive alternatives to Zuffa).²¹⁷ Record evidence emphasizes the importance of locking up Zuffa's best Fighters.²¹⁸ Joe

216. ZFL-1404974, at 976 (emphasis added).

217. See Parts III.C.1-2, *infra*.

218. See WME-ZUFFA-00001150 at *11 (Champions have on average 6.5 bouts remaining; Ranked 1-5 have 5.5 bouts remaining; Ranked 6-10 have 3.6 bouts remaining; Ranked 11-15 have 3.2 bouts remaining).

Silva testified that this strategy “could ensure that if [the Fighter] became champ [Zuffa would] have them locked up for a longer period of time.”²¹⁹

80. If the Fighter refused to sign a new contract or tried to hold out for a better bargain, Zuffa had several tools at its disposal to put pressure on the Fighter, including, among other practices, delaying the final bout, offering an inappropriate or unfavorable match-up, and/or giving the last fight poor placement on the event’s Fight Card. Delaying a Fighter’s last fight was costly to Fighters, who receive compensation from Zuffa only when they fight.²²⁰ Zuffa could also ensure that a Fighter refusing to sign a new contract made less money at his final bout.²²¹ Zuffa could, in addition, ensure that the Fighter was pitted against a mismatched or unfavorable opponent who could hinder the Fighter’s career, thus putting the Fighter in the position of taking the fight and risk losing or being injured, or turning down the fight and triggering an extension of the Fighter’s contract.²²² As Plaintiff Kingsbury made clear:

219. Silva Dep. at 456:21-25. *See also* Silva Dep. at 455:6-456:11; Silva Exh. 53 (discussing a Fighter (Thiago Alves) who was “on a 7 fight win streak and was the number one contender to fight the winner of GSP versus B.J. Penn,” and offering Alves a “2 tier contract, with a higher path if he becomes champ. The good thing about those is it locks them in longer if they become champ”).

220. Deposition of John Fitch, February 15, 2017 at 119 (“Q: And the reason why you would have to had sit out a year is because after you finished your fight --A: Because if I didn’t sign up, if I didn’t to do the re-up with the contract, I wouldn’t have gotten a bout agreement. Q: Until? A: They would have exercised their time limit term to the full. Q: And the reason you know about that is because you heard about Huerta? A: Because they had done it to other people. Q: And you’ve heard about -- you gave one other example; is that correct? A: Huerta and Arlovski. Q: So you know two examples -- A: I know of two examples where the guys were brave enough to see it through. Most guys know if you don’t sign the re-up, you don’t get your bout agreement. If you don’t get your bout agreement, you don’t get paid, you don’t get money, you can’t feed your children.”).

221. Silva Dep. at 385:15-21 (“Q. If a fighter refused to accept the new deal that you were offering them between the third and the fourth fight, he would face a situation where he was fighting that last fight at less compensation than he would have gotten had he accepted the new deal...? A. Yes, he chose to fight at less money.”).

222. Zuffa could extend a Fighter’s contract by six months if the Fighter turned down a proposed bout. Silva Dep. at 426:6-12. In principle, Zuffa could retain a Fighter under contract in perpetuity if the Fighter refused to accept matchups that Zuffa proposed. Silva Dep. at 433:13-434:16. In a May 2014 e-mail string between General Counsel Lawrence Epstein and Assistant General Counsel Kirk Hendrick, Mike Mersch discussed how best to retain Light Heavyweight Champion Jon Jones. Epstein writes: “We need to send him a letter formally offering the Gustafson fight and giving him a specific deadline to accept or reject. When he says no we need to extend him.” *See* ZFL-0990908. After Roy Nelson’s manager turned down a new contract offer in May 2013, Lorenzo Fertitta wrote “I offered 9 fights 125+50 for regular bout, 500 flat for title fight, 500 plus ppv if defending. If ppv does 600k buys he makes 1.1m. Very

Joe Silva wanted me to fight [Glover Teixeira, a training partner of Chuck Liddell] on the undercard in Glover's first fight in the UFC. And that is exactly the kind of thing that hurts fighters. Nobody knew who he was. He was extremely talented. It was a lose-lose. If I beat him, I'm supposed to beat him. If I don't beat him, I just got my ass kicked by a guy that nobody knows.

I had another unknown opponent in his first fight in the UFC. I had to fly all the way to England for it. It was on the undercard, and it was against a guy who at the time was 11 and 0, no losses, and not a single opponent had made it out of the first round with him. So he was highly decorated and not known. Again, as stated, a lose-lose for me. And then I had received the damage that I did in that fight. And with my second orbital blowout on the same side, I was really concerned for my health fracturing the eyebrow as well and was just considering is it worth it? I can't get out of my contract. There's nowhere else to go at this point. Strikeforce didn't exist anymore. Pride didn't exist anymore. And I had no way of saying no.²²³

Fighters who chose to reject inferior matchups also faced the risk that Zuffa would retaliate by matching them against even less desirable opponents in the future. According to Dana White,

I can tell you this man, if you call Joe Silva and turn down a fight, you might as well say 'fucking rip up my contract.' He will... yeah. He's a mean little fucker. You don't call Joe Silva and tell him you don't want to fucking fight anybody man. You might as well just take the fight, 'cuz, 'cuz, it's gonna be worse, if you do [refuse the fight]. You might as well just do it, [just say] fuck it, alright? I'll fight him.²²⁴

fair offer." Joe Silva responded "If you can't get Roy to do that deal tell him instead he can fight Dos Santos June 15 in Winnipeg on his last fight for 24+24. [I]f he turns that fight down it allows us to extend his contract." See ZFL-1897652 at 748. See also Deposition of Joseph Silva at 126:14-18 ("Q. But you have, during the course of your work at Zuffa, caused notices to go out to fighters extending the terms of their contracts when they've turned down fights; correct? A. Yes.").

223. Deposition of Kyle Kingsbury, February 17, 2017, at 118. See also Deposition of John Fitch, February 15, 2017, at 87 ("A: So they took really tough amateur-type guys, but the crowd didn't know who they were. It's a lose-lose fight for somebody with notoriety. Because if you don't go in there -- if you go in there and completely beat the guy up, fine, you were supposed to. They didn't know who the other guy was. You go in there and you win, but you don't destroy the guy, oh, you suck now because you didn't destroy a guy with no name. Or you lose, you lose to a guy who has no name, and now your notoriety and your value drops immensely. They may even cut you because you lost. So that is one of the most subtle ways that they really put fear into people, is they control your destiny. They control who you fight, when you fight, and how much you fight for.").

224. *UFC on Fuel TV 7 post-fight media scrum* (Feb. 2013), available at <https://youtu.be/y0NTilTqn2w?t=12m9s> See also Deposition of Nate Quarry, September 30, 2016, at 47:23-25 ("As Joe Silva said one time, 'If you don't like the first fight I offer you, you're sure as shit not going to like the second one.'"). See also ZFL-1421551 (In April 2010, Joe Silva wrote regarding negotiations with UFC fighter Nick Diaz, "I lowballed them on purpose the first offer knowing they would turn it down. How bout I come back with 29+29 32+32 35+35 38+38. If they turn it down I put him in a prelim against a really tough guy for his last fight."). See also Silva Dep. 405:12-19 ("So everything's equal. And the only thing you know now is that this guy's main card worthy and he has agreed to re-up, versus, it's the same situation, main card worthy where he's not agreed to re-up. You'd more likely give the main card in a better position to the guy who has agreed to re-up as opposed to the one who hasn't; right? A. Yes."); ZFL-2496215 (July 2012 e-mail exchange between Joe Silva, Michael Mersch and Tracy Long discussing that it was Quinton Rampage Jackson's

Zuffa could also retaliate by giving a Fighter inferior card placement; for example, a Fighter could be placed on the undercard instead of the Top of the Card.²²⁵ If a Fighter lost even once, Zuffa could use (or threaten to use) the Cut Clause to cut Fighters in the middle of their contracts, allowing the Fighter to fight again only after agreeing to lower compensation.²²⁶

81. Further, Zuffa leveraged its tolling provisions to extend Fighters' contracts beyond the period of injury.²²⁷ When a Fighter was injured, Zuffa would interpret its contracts to provide an extension of time equal to the time between fights, not the actual length of time that the Fighter was injured.²²⁸ In practice, this meant that Zuffa itself had control over the length of time the contract was extended. In July 2009, Tracy Long, a Zuffa employee overseeing management of Fighter contracts, wrote "we sent an injury extension letter for Fabiano on April 7, 2009. How much time do you want to add to his agreement?" Sean Shelby, a Zuffa matchmaker, responds,

last fight on his contract, would not sign a new deal and that Zuffa used its discretion to not make Jackson's bout the main event).

225. In April 2010, following UFC's regular practice, Joe Silva offered fighter Nick Diaz a new contract before Diaz's last fight. Silva explained, "If they [Diaz's team] turn it down I put him in a prelim against a really tough guy for his last fight." Silva Dep., Exh. 43 (ZFL-1421551). Silva testified that he would have matched Diaz against a tough guy regardless, but admitted that, all else equal, he would be more likely to give the main card to a fighter who has renewed their contract, as opposed to one who has not. *See* Silva Dep. at 401:2-19, 405:12-19.

226. *See, e.g.*, ZFL-2496264 (Fighter Hector Lombard was on "his 4th fight of an 8-fight Agreement." Under his original contract he was entitled to "205K to show and \$75 to win" but Joe Silva explains, "He is no longer under that deal. In return for not being cut he is fighting a 1 fight deal for 100K.").

227. At some point before November 2012, Zuffa began automatically issuing injury extensions to Fighters known to be injured after a bout, regardless of whether the Fighter had been offered another fight. Silva Dep. at 412:7-413:22.

228. *Id.* at 410:15-21 (Silva would "always just do it [issue the extension] for the time period in between fights."); *id.* at 421:6-17 (same). *See also* ZFL-2536288 (Fighter Matt Wiman writes: "Hey Tracy, I'm a little confused about my extension ... Can u explain it in simpler terms to me ... I was only injured for 2-3 months and the letter states an 8 month extension." Long responds: "Joe Silva gave me the time-frame. I believe it is based upon when you last fought and when you will fight. You last fought on October 1, 2011. You are now scheduled to fight on September 29, 2012." Wiman: "So all the months I'm training and waiting patiently are not counted? This is bc there's so many fighters and you all have to honor your contracts?"). *See also* ZFL-2494948 (Bryan Caraway receives a six month extension on top of four month extension. Caraway: "I was only hurt for 2 months?? Why is my contract being extended 6 months?" Long explains the math to Sean Shelby, based on time between fights). *See also* Deposition of Joseph Silva at 390:24-392:3.

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“Whatever gets the most amount of time per the contract.”²²⁹ In his deposition, Joe Silva testified that, if Zuffa learned that a Fighter became injured in between fights, Zuffa would automatically extend the duration of the contract for the entire period between fights—even if the injury did not prevent the Fighter from being available on schedule for his next fight.²³⁰

82. Zuffa exploited its tolling provisions to extend Fighter contracts even when there was no record of Fighters actually being injured. When Long discovered in October 13, 2014 that Mats Nilsson was only on his second fight of a four-fight Agreement terminating on November 8, 2015, head matchmaker Joe Silva told her to send him a six-month extension despite having no record of Nilsson being injured.²³¹ Long emailed Mersch to ask him what she should do, and he responded, “I guess we just need some sort of basis for the 6 months extension Joe is asking us to add onto his deal.”²³² Ultimately Zuffa sent a six-month extension letter.²³³

83. Zuffa exploited the retirement clause to prevent other MMA promoters from retaining UFC Fighters it wanted to keep from them. For example, in August 2014, Mark Bocek announced his retirement, and then requested that Zuffa release him from his contract. Joe Silva wrote in a text message: “Bocek was sent a retirement letter but now he is asking for a complete release. He’s coming off a win so I would not give it to him. He could end up fighting for Bellaforce [*sic*].”²³⁴ Zuffa further exploited the retirement provision to indefinitely prevent retired

229. ZFL-2685237.

230. Deposition of Joseph Silva at 412:7-12 (“Q. So just so I’m clear, Zuffa finds out that a fighter is injured the day after a fight, it automatically issues an injury extension to that fighter even if that fighter hasn’t been offered another fight; is that right? A. Correct.”). *See also* Deposition of Joseph Silva at 408:24-413:7.

231. ZFL-0529761 at 62-63.

232. ZFL-2479576.

233. ZFL-0529761 at 61. *See also* ZFL-2494934 (similar example for Bradley Scott in Feb. 2015: Silva instructs Tracey Long to add 10 months to his contract despite noting “We don’t have any record for any injuries for Bradley Scott. If he got hurt, he never reported it to us”).

234. ZFL-1897652 at 796. Silva used the term “Bellaforce,” which was a made-up combination of Bellator and Strikeforce, to refer generically to other MMA promoters. *See* Deposition of Joseph Silva at 469:22-25.

Fighters from even appearing at (not fighting in) other MMA promoters' events. For example, when Bellator announced that a retired UFC Fighter—who had last fought for the UFC more than 18-months earlier—would make promotional appearances in connection with an upcoming Bellator event, Zuffa invoked the exclusivity terms of the Fighter's contract to prevent the Fighter from participating.²³⁵

84. Fighters who made it to the end of the defined term of their contracts—that is, those who fought the requisite number of bouts during the requisite time period, endured any extensions, and turned down Zuffa's renewal offers—were still bound exclusively to the UFC for many months. Even after the “term,” if a Fighter wanted to Fight for another MMA promotion, that Fighter would first need to wait out up to three months of the exclusive-negotiation period—during which time the Fighter was forbidden from engaging with any other MMA promotion. Next, the Fighter would need to endure the year-long right to match period, during which the Fighter is required to bring any offer from another MMA promotion to Zuffa; if Zuffa agrees to match, the Fighter is then automatically bound to Zuffa under the terms of that matched contract.²³⁶ Only after these extended delays—during which Fighters would not be fighting, and thus not earning MMA income, and also risked sacrificing their prominence and marketability²³⁷—could they negotiate freely with other MMA promoters, whom themselves were hobbled by the difficulty of

235 ZFL-0469293 (Nov. 10, 2014 letter from Kirk Hendrick demanding that Silva not appear at Bellator's events); ZFL-1016893 (discussing Zuffa's efforts to block Silva from appearing); *see also* Hendrick Dep. V.I at 170-72 (describing Wanderlei Silva's potential activities “promoting” Bellator's event, “showing up at a press conference” for Bellator and attending the event as violating Silva's Fighter Contract). Silva announced his retirement on September 19, 2014, citing fighter treatment and poor pay from the UFC as his motivation. *See* <http://mmajunkie.com/2014/09/wanderlei-silva-lashes-out-at-ufc-in-video-announcing-retirement-from-mma>. Silva had last fought for the UFC in March 2013, more than 18 months prior to his retirement.

236. *See* Part II.B.2, *supra*.

237. Silva Dep. at 463:23-464:8.

gaining access to sufficient Fighter talent due to the Challenged Conduct.²³⁸ In short, through its contracts and contracting practices, Zuffa conferred upon itself the power to impose substantial costs and risks on Fighters (with short careers and windows of opportunity to exploit them), creating powerful incentives for Fighters to sign new contracts with the UFC, instead of holding out for competing offers from other MMA promoters.²³⁹

85. In the economic literature, contractual terms such as Zuffa's right to match clause are known as the "Right of First Refusal" ("ROFR").²⁴⁰ Economists have shown that ROFRs, under certain conditions, can be beneficial to buyers (in this case, Zuffa), and harmful to both sellers (in this case, Fighters) and potentially competing buyers (in this case, other MMA promoters). Because "the seller places himself in a disadvantageous position by awarding the special buyer this right [of first refusal],"²⁴¹ economic analysis "offers prescriptive advice: considerable caution should be exercised prior to granting a right of first refusal."²⁴² Other economists have shown that ROFR can reduce the incentives for other buyers to compete with the favored buyer, which "reduces the marketability of the seller's asset."²⁴³ As economist Michael

238. See Parts III.C.1-2, *infra*. Indeed, as discussed further below the UFC engineered its contracts such that their possible expirations would be staggered, preventing other MMA promotions from being able to gain access to multiple top-flight Fighters at the same time. See Part III.C.3, *infra*.

239. Deposition of John Fitch, February 15, 2017 at 121 ("Q: Okay, but outside of the re-up, if you really didn't want to sign the re-up, the contract would end after the duration of the contract, which in the case of Exhibit 51, I believe is 18 months, and then -- A: 18 months without making a dime. That would retire a fighter. We don't make that much money. You don't fight, you don't work for 18 months, you're not going to survive, you're not going to live. You don't get a choice."). See also ZFL-2642993 (January 2008 email from the agent for Andrei Arlovsky, a former UFC Heavyweight Champion, stating that "It is extremely damaging to Andrei's career to be shelved for such a long period of time [more than one year]").

240. Sushil Bikhchandani, Steven Lippman & Reade Ryan, *On the Right of First Refusal* 5(1) ADVANCES IN THEORETICAL ECON. (2005).

241. *Id.* at 2.

242. *Id.*

243. Marcel Kahan, Shmuel Leshem & Rangarajan Sundaram, *On First-Purchase Rights: Rights of First Refusal and Rights of First Offer*, 14 AMERICAN L. & ECON. REV. (2012). See also Leandro Arozamena & Federico Weinschelbaum, *A note on the suboptimality of right-of-first-refusal clauses*, 4(24) ECON. BULLETIN (2006) 1-5, at 1 ("We show that, under independent private values, no mechanism that includes an ROFR clause can maximize the

Leeds and his co-authors explain in *The Economics of Sports*, restricted free agency in professional sports confers an ROFR to a player's original team; as a consequence, "the expectation that the original team will match any offers may reduce the size or number of offers a restricted free agent receives."²⁴⁴

86. Consistent with this literature, the practical effect of the right to match period was to block rivals from signing Zuffa Fighters for the entire twelve-month right to match period—a substantial fraction of a typical Fighter's career.²⁴⁵ There are virtually no examples of Fighters successfully departing Zuffa during the right to match period; the few exceptions have occurred after this lawsuit was filed—and even in these cases, record evidence indicates that Zuffa has taken care not release sufficient Fighters to allow would-be rivals to stage competitive bouts.²⁴⁶ A would-be rival does not gain a competitive advantage if it signs Fighters away from Zuffa, but fails to sign suitable opponents for them.

87. The right to match clause carried additional negative implications for other MMA promoters, including the requirement to divulge key competitive information about the terms of their Fighter contracts to Zuffa. Scott Coker, formerly CEO of Strikeforce and currently CEO of Bellator, explains how granting Zuffa access to Bellator's Fighter contract information (as the right

joint expected surplus of the seller and the right-holder. Adding such a clause to any given auction format, then, is jointly suboptimal for the two parties involved.”).

244. MICHAEL LEEDS, PETER VON ALLMEN & VICTOR MATHESON, *THE ECONOMICS OF SPORTS* (Routledge 5th ed. 2016) [hereinafter *ECONOMICS OF SPORTS*].

245. *See* Part II.C.2, *infra* (documenting Fighters' short careers); *see also* Hendrick Dep. V.I (“If [a fighter is] ready, willing, and able to fight and they want to fight, 12 months I would say is a time period that is significant for a fighter's career.”).

246. *See* ZFL-1872579. In a February 2014 text message discussion between White and Lorenzo Fertitta regarding re-signing Gilbert Melendez, Melendez's contract with Zuffa was ending and he had come to an agreement with Bellator. In response, Zuffa exercised the right to match clause to re-sign Melendez. *See* ZFL-1897652. Fertitta texts White: “We gotta keep taking these fuckers oxygen till they tap out. We have sacrificed too much to let anyone get traction now[.]” At his deposition, Fertitta testified that the term “fuckers” referred to Bellator, while the “oxygen” referred to Fighters Gilbert Melendez and Eddie Alvarez, both of which Bellator was attempting to recruit. *See* Fertitta Tr. at 291-92.

to match clause requires) would permit Zuffa to “obstruct and stifle Bellator’s initiatives or to exploit its weaknesses,”²⁴⁷ including blocking Bellator from accessing Fighters critical to its business. Independent analysts recognize that the ROFR works in concert with other exclusive provisions of Zuffa’s contracts to keep Fighters bound to Zuffa. According to a 2009 Deutsche Bank Report:

UFC athlete contracts are designed to retain talent within the Company. Most contracts are two years in length with an exclusivity clause that prevents fighters from moving to different MMA organizations while under contract and with negotiation and matching rights after the agreement expires.²⁴⁸

2. Given Fighters’ Short Career Durations, Zuffa’s Exclusionary Provisions Were Effectively Perpetual for Fighters Who Zuffa Wished to Retain

88. I define the cumulative duration of exclusivity as the sum of: (1) the contract term (including the lead-up time to a Fighter’s first bout); (2) the option period (for those Fighters who had such a provision); (3) any exclusive negotiation period; and (4) the right to match period.²⁴⁹ During (1), (2 if present), and (3), Fighters are directly prohibited from negotiating with or fighting for any other MMA promoter. For the duration of (4), Fighters remain unable to negotiate freely with other MMA promoters, because Zuffa can retain the Fighter simply by matching the terms of any competing offer, with the Fighter contractually obligated to accept Zuffa’s matching terms without further negotiations. In other words, Zuffa maintained and exercised the unilateral and exclusive ability to block any Fighter under contract with it from fighting for another MMA

²⁴⁷ Coker Declaration ¶15.

²⁴⁸ ZUF-00162329-382 at 361. Another 2012 Deutsche Bank Credit Finance Report found that “marquee fighters typically have longer-term contracts, with an exclusivity clause, that prevents fighters from moving to different MMA organizations while under contract, and with negotiation and matching rights after the agreement expires.” *See* DB-ZUFFA-00006389 at 392. *See also* Goldman 30(b)(6) Tr. 71:18-72:3 (Zuffa told Deutsche Bank as part of their efforts to sell Zuffa’s debt that “the exclusivity clause that prevents fighters from moving to different MMA organizations while under contract and with negotiation and matching rights after the agreement expires is part of how the [Fighters’] contracts are designed to retain talent within [the UFC].”).

²⁴⁹ *See* Part II.B for details of these contractual terms.

Promotion for the entire period, stretching from (1) through and including (4).²⁵⁰ Zuffa's ability to withhold Fighters from other MMA promoters factors prominently into my analysis of foreclosure and the anticompetitive effects of the Challenged Conduct.²⁵¹

89. As seen in Table 1 below, the typical duration of contractual exclusivity from 2001 through 2015 is approximately 34.5 months (equal to an average of 19.0 months of the initial term, plus 2.5 months in options, plus 1.5 months of exclusive negotiation, plus 11.5 months of right to match).²⁵² The average duration of exclusivity has increased over time, fluctuating between 5.7 months (in 2003) and 40.3 months (in 2014). The average duration of exclusivity over the Class Period was 36.7 months. The median duration was 35 months.

250. Silva Dep. at 186:4-12 ("Q. Would you agree with me that if there was a UFC fighter who no longer wanted to fight with the UFC for some reason and the UFC was determined to match any offer, that that fighter, in order to get out from under the contract, would need to wait the 90 days of the exclusive negotiation period and then the 12 months of the right to match; correct? A. That's my understanding.").

251. See Parts III.C-D, *infra*.

252. Zuffa has produced contracts executed by Fighters between May 2001 and November 2015. I have no reason to believe that contracts executed after November 2015 differ materially from those executed beforehand.

TABLE 1: AVERAGE DURATION OF CONTRACTUAL EXCLUSIVITY (MONTHS)

Year	Initial Term	Option Period	Exclusive Negotiation Period	Right To Match Period	Total
2001	13.01	0.00	1.80	11.40	26.21
2002	9.25	0.00	2.00	12.00	23.25
2003	1.00	0.00	1.58	3.12	5.69
2004	5.17	6.40	1.68	5.35	18.60
2005	5.75	2.33	1.67	4.96	14.71
2006	12.08	2.21	1.92	10.54	26.75
2007	16.51	4.69	1.91	11.59	34.69
2008	18.96	3.01	1.97	11.94	35.89
2009	19.37	2.14	1.99	11.92	35.42
2010	19.72	1.40	1.99	11.96	35.07
2011	19.18	2.36	1.04	11.93	34.51
2012	19.75	3.60	0.01	11.92	35.28
2013	20.78	2.98	0.01	12.00	35.78
2014	23.95	1.86	2.51	11.96	40.28
2015	22.23	0.00	2.96	12.00	37.19
<i>Overall Average Duration</i>					
All Yrs.	19.07	2.50	1.46	11.45	34.47
Class Period Through 2015	21.18	2.50	1.10	11.96	36.73
<i>Overall Median Duration</i>					
All Yrs.	20.00	0.00	2.00	12.00	32.00
Class Period Through 2015	20.00	0.00	0.00	12.00	35.00

Source: Zuffa contract data. Class Period begins December 16, 2010. The year in this table corresponds to the year in which contracts were signed.

90. The cumulative duration of contractual exclusivity as shown in this chart is economically significant, because (among other reasons), Fighter careers typically last only a few years. An internal Zuffa analysis prepared in 2014 estimated that a Fighter's overall average career length, measured from their first bout to their final bout with Zuffa, was approximately 2.5 years,

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when considering those who fought for Zuffa at any time between 1993 and 2014.²⁵³ The same analysis finds that the average Fighter's career length declined from 6.4 years in 2001 to between three and four years in the mid-2000s, falling to approximately one to two years in more recent years.²⁵⁴ My own analysis indicates that the median career length for Zuffa Fighters—including bouts fought before and/or after the Fighter signed with Zuffa—is approximately 41 months, or about five bouts.²⁵⁵ Analysis performed by WME-IMG confirms that Zuffa's contract durations are even longer for top-ranked Fighters than for lower-ranked Fighters,²⁵⁶ and singles out the importance of Zuffa's long-term contracts for managing the "Risk of Fighter Compensation Inflation."²⁵⁷

91. Given the durations of exclusivity shown in Table 1, it is clear that even a single contract can easily span all or the vast majority of a Fighter's career—rendering that Fighter unavailable to fight for would-be rivals for his or her entire career even if Zuffa never engages in the practices described above to cause the Fighter to renew the contract. Fighters who renewed their contracts even once (let alone multiple times) could easily be made unavailable to would-be rivals for the entirety of their careers. Given Zuffa's ability to leverage the Challenge Conduct to renew and extend Fighter contracts, Zuffa had the ability to, and did, make its contracts effectively perpetual for those Fighters whom it wished to retain.

253. See ZFL-1376378-79. See also ZFL-2642993 (January 2008 email from the agent for Andrei Arlovsky, a former UFC Heavyweight Champion, stating that "It is extremely damaging to Andrei's career to be shelved for such a long period of time [more than one year]"); ZFL-2632955 (agent stating that "MMA fighters [] career primes are generally short"). Zuffa's corporate designee concurred that sitting out for 12 months is not a reasonable option given Fighters' typically short career durations. Hendrick 30(b)(6) Dep. V.I ("If [a fighter is] ready, willing, and able to fight and they want to fight, 12 months I would say is a time period that is significant for a fighter's career.").

254. See ZFL-1376378-79.

255. Calculated using data obtained from Sherdog.com.

256. WME-ZUFFA-00001150 at *11 (showing that champions have, on average, 6.5 bouts remaining in their contracts; Fighters ranked 1-5 have 5.5 bouts remaining on average; Fighters ranked 6-10 have 3.6 bouts remaining on average, and so on).

257. *Id.*

III. THE CHALLENGED CONDUCT WAS EXCLUSIONARY AND HARMED COMPETITION

92. Economists and antitrust scholars have identified criteria to determine whether conduct is exclusionary and harmful to competition, and these criteria can be informed by economic analysis. In this section, I lay out these criteria in detail, and I demonstrate that they are satisfied here.

93. In Parts III.A and III.B, I demonstrate that Zuffa has significant monopoly and monopsony power, using well-accepted “indirect” and “direct” methods of proof. Indirect proof of market power involves defining relevant product (and geographic) markets, demonstrating that Zuffa has high market shares within the relevant markets, and showing that substantial barriers to entry exist. Direct proof is more straightforward, and simply requires evidence that Zuffa has in fact exercised monopoly and/or monopsony power. It bears emphasis that product market definition is a tool to *infer* pricing power—that is, the ability to raise prices above competitive levels, or to suppress compensation below competitive levels. Because here we have direct evidence that Zuffa exercised monopoly and monopsony power, indirect evidence is of secondary importance.²⁵⁸

258. See, e.g., Jonathan B. Baker & Timothy F. Bresnahan, *Economic Evidence in Antitrust: Defining Markets and Measuring Market Power*, in Paulo Buccirossi, ed., *HANDBOOK OF ANTITRUST ECONOMICS* (2007) [hereafter, “Baker & Bresnahan”], at 15 (“Historically, in the antitrust world, market power has most commonly been identified through inference from a high market share. But direct evidence has increasingly become important as an alternative, in part because academic economists have developed a number of econometric approaches for measuring market power.”). Baker and Bresnahan also note that “quantitative methods of measuring market power through direct evidence have parallels involving the use of qualitative evidence.” *Id.* See also Aaron S. Edlin & Daniel L. Rubinfeld, *Exclusive or Efficient Pricing? The Big Deal Bundling of Academic Journals*, 72 *ANTITRUST L.J.* 119, 126 (2004) (“Market definition is only a traditional means to the end of determining whether power over price exists. Power over price is what matters...if power can be shown directly, there is no need for market definition: the value of market definition is in cases where power cannot be shown directly and must be inferred from sufficiently high market share in a relevant market.”). See also PHILLIP E. AREEDA, EINER ELHAUGE & HERBERT HOVENKAMP, 10 *ANTITRUST LAW: AN ANALYSIS OF ANTITRUST PRINCIPLES AND THEIR APPLICATION* 267, 325–28, ¶ 1758b. (1996 & Supp. 2003); see also PHILLIP AREEDA, LOUIS KAPLOW & AARON EDLIN, *ANTITRUST ANALYSIS: PROBLEMS, TEXT AND CASES* ¶ 344 (6th ed. 2004).

94. In Part III.C, I lay out the criteria for demonstrating that the Challenged Conduct foreclosed competition to a substantial degree, and I show that these criteria are satisfied here. In Part III.D, I show that the Challenged Conduct generated anticompetitive effects.

A. Indirect Evidence of Zuffa's Market Power

95. In general, a threshold requirement for demonstrating that the Challenged Conduct was exclusionary and harmful to competition is to show that the conduct at issue was undertaken by a firm with significant market power.²⁵⁹ As explained below, for my indirect proof of monopsony power, I define a Relevant Input Market of MMA Fighters, which is measured in two ways using industry-accepted databases. I also define a Relevant Input Submarket of “Headliners,” consisting of all Fighters ranked one through fifteen according to industry-accepted databases in any of the ten major MMA weight classes.²⁶⁰

96. For assessing indirect proof of monopoly power, I define the Relevant Output Market as Live MMA Events in which the participating Fighters are in the Relevant Input Market.²⁶¹ For both the input and output markets, I define the Relevant Geographic Market as North America. The evidence shows that Zuffa enjoys dominant shares in the Relevant Output

259. See, e.g., Salop, *supra*, at 374 (noting that “monopoly and dominant firm markets” are where potentially exclusionary conduct “raise[s] the greatest concerns,” although this conduct “can allow non-dominant firms that lack market power to achieve that power, particularly where parallel exclusion by multiple firms can lead to anticompetitive coordination.”). See also IIIA PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW* ¶ 801, at 318 (2d ed. 2002); see also Einer Elhauge, *Defining Better Monopolization Standards*, 56 STAN. L.R. 253 (2003) [hereafter, “Elhauge”], at 257-261; 330-339.

260. I consider the Relevant Input Submarket to be the top 15 Fighters in each class weight class. I choose 15, as opposed to 10, 25 or some other number, because (1) FightMatrix.com only lists the top 15 for their “pound-for-pound” fighter ranking (<http://www.fightmatrix.com/historical-mma-rankings/generated-historical-rankings/?Issue=111&Division=-1>), (2) UFC’s internal fighter rankings display the top 15 fighters per weight class (http://www.ufc.com/rankings?fb_comment_id=6086517324953#f17c6b2f929913), and (3) the top 15 are displayed in USA Today/MMA Junkie’s ranking system (<http://mmajunkie.com/rankings>). Relatedly, as explained by Leon Margules, President of Warriors Boxing Promotion, boxers ranked in the top fifteen by one of the major sanctioning organizations are mandatory challengers for the title, and thus by definition championship-caliber. Margules Dep. at 85:17-86:13 (“Only ... if they are ranked in the top 15 will they qualify.”).

261. This includes all Fighters in the Relevant Input Submarket as well, which is a subset of the Relevant Input Market.

Market, the Relevant Input Market, and the Relevant Input Submarket: Zuffa's (buying) share of the Relevant Input Market (however measured) ranges from 71 percent to over 99 percent from the start of the Class Period through June 2017; Zuffa's (buying) share of the Relevant Input Submarket ranges from 52 percent to over 90 percent since the start of the Class Period, and has exceeded 70 percent since late 2011; Zuffa's (selling) share of the Relevant Output Market has been approximately 90 percent by revenue since at least 2008. In addition, barriers to entry, including artificial barriers to entry and expansion created by the Challenged Conduct, are high. The combination of dominant market shares and barriers to entry allows me to conclude that Zuffa has had monopoly power in the Relevant Output Market and monopsony power in the Relevant Input Market and Submarket since at least the beginning of the Class Period.²⁶²

97. The DOJ's and FTC's *Horizontal Merger Guidelines* define a relevant antitrust (output) product market as a product or group of products such that a hypothetical monopolist that was the only present and future seller of those products could profitably impose a small but significant and non-transitory increase in price (the "SSNIP") over the competitive level.²⁶³ The SSNIP is normally taken to be five percent.²⁶⁴ If enough customers view some products outside a proposed product market as sufficiently interchangeable with products within the proposed market, the hypothetical monopolist could not profitably raise prices by the SSNIP. The forgone profits

262. See HERBERT HOVENKAMP, *FEDERAL ANTITRUST POLICY* 82-83 (3d ed. 2005). There is no consensus as to precisely how high a firm's market share must be to convey monopoly power. If an industry has a competitive fringe that imposes some competitive discipline on the dominant firm, many economists consider market shares in the range of 30 to 50 percent to be too low to infer monopoly power. See *MODERN IO* at 644. In this case, the fringe of the market is not competitive, as a consequence of the Challenged Conduct.

263. *Merger Guidelines* §4.1.1.

264. *Id.* §4.1.2 ("The Agencies most often use a SSNIP of five percent of the price paid by customers for the products or services to which the merging firms contribute value. However, what constitutes a "small but significant" increase in price, commensurate with a significant loss of competition caused by the merger, depends upon the nature of the industry and the merging firms' positions in it, and the Agencies may accordingly use a price increase that is larger or smaller than five percent.").

from the switching of consumers would exceed increased profits gained from the higher price paid by remaining customers.

98. When it comes to input markets, market definition proceeds in an analogous fashion for the analysis of monopsony power. In this case, a relevant (input) market consists of a product or group of products such that a hypothetical monopsonist that was the only present and future buyer of those products could profitably impose a small but significant and non-transitory *decrease* in prices (or wages) below the competitive level. In the buying context, market definition turns on “the alternatives available to sellers in the face of a decrease in the price paid by a hypothetical monopsonist.”²⁶⁵ If sellers enjoy “numerous attractive outlets for their goods or services,”²⁶⁶ then the hypothetical monopsonist would not be able to depress prices (or wages) significantly below competitive levels. Conversely, the exercise of monopsony power will be profitable when sellers have few competitive outlets to which to turn in response to a decrease in the price (or wage).²⁶⁷

1. The Relevant Input Market

99. Following the *Merger Guidelines*, I define the Relevant Input Market and Submarket based on the alternatives to which Fighters could reasonably substitute to counteract an exercise of monopsony power by Zuffa. As explained below, I provide two alternative metrics of the Relevant Input Market using two industry-accepted databases. The Relevant Input Submarket, a subset of the other markets, is also measured using industry-accepted databases:

²⁶⁵ *Id.* §12.

²⁶⁶ *Id.*

²⁶⁷ Given the nature of the Challenged Conduct—namely, foreclosure from a critical or must-have input—an alternative way to think about input market definition is from the perspective of potential rival MMA promoters: What is the narrowest set of Fighters that could be foreclosed via exclusionary agreements by a hypothetical monopsonist such that a potential rival MMA promoter would be materially impaired in its ability to compete effectively in the Relevant Output Market? Both frameworks lead to the same answer. *See, e.g.* Eric Cramer & Daniel Berger, *The Superiority of Direct Proof of Monopoly Power and Anticompetitive Effects in Antitrust Cases Involving Delayed Entry of Generic Drugs* 39 UNIVERSITY OF SAN FRANCISCO L. REV. (2004) at 112-113 (“[A] relevant product market is always defined in relation to the claims that give rise to the inquiry in the first place.”).

1. Under the Tracked measure, all Fighters fighting for an MMA promoter included in the FightMetric database (which “tracks” Fighter performance) are included in the Relevant Input Market. A hypothetical monopsonist over all Tracked Fighters could profitably exercise monopsony power, because an MMA promoter without Tracked Fighters would not be able to offer competitive matchups to advance a Fighter’s career.
2. Under the Ranked measure, the Relevant Input Market is expanded to include (1) all Fighters encompassed by the Tracked measure; and (2) any Fighter ranked in the FightMatrix ranking database. This includes Fighters ranked from 1 through 650 in any of the fourteen MMA weight classes in the FightMatrix database. The Ranked measure also includes ONE Championship, as explained below. A hypothetical monopsonist over all Ranked Fighters could profitably exercise monopsony power, because an MMA promoter without Ranked Fighters would be even less able to offer competitive matchups than an MMA promoter without Tracked Fighters.
3. Under the Headliner definition, the Relevant Input Submarket includes the top fifteen Fighters in any of the ten major MMA weight classes,²⁶⁸ as ranked by FightMatrix. A hypothetical monopsonist over all Headliners could profitably exercise monopsony power, because non-Headliners are, by definition, lower-ranked Fighters that would typically provide sub-optimal matchups for Headliners.

100. As explained below, athletes from combat-oriented sports outside of MMA such as boxing and wrestling are outside the Relevant Input Market, as are athletes from non-combat sports such as football or hockey. A market definition that encompassed Fighters from *all* MMA promoters would also be far too broad: The vast majority of these MMA promoters do not offer comparable competitive alternatives to which MMA Fighters could reasonably substitute to counteract an exercise of (buyer) market power by Zuffa. As explained below, the evidence indicates that even the most prominent non-Zuffa MMA promoters are at best distant substitutes to Zuffa from the perspective of Fighters.²⁶⁹ Nevertheless, both my Tracked measure and my Ranked

268. See Part I.A, *supra* The Headliner definition omits the following minor weight classes: men’s strawweight, women’s featherweight, women’s flyweight, and women’s atomweight weight classes. However, these weight classes are included in the Ranked measure of the Relevant Input Market.

269. See also Part III.A.8, *infra*.

measure conservatively include Fighters from non-Zuffa MMA promoters, based on two alternative industry-accepted databases.

101. Combat-oriented sports outside of MMA, such as boxing, kickboxing, sumo wrestling, and professional wrestling, do not constitute sufficiently viable employment alternatives for MMA Fighters to defeat an exercise of monopsony power by a hypothetical monopsonist in the Relevant Input Market. The process of training to become an MMA Fighter is expensive and time-consuming. For this reason, Zuffa sometimes considered it superior to use lower-tier promoters to develop MMA talent instead of developing talent from scratch,²⁷⁰ and even acquired other MMA promoters, in part, to gain access to their Fighters.²⁷¹ Training to become an MMA Fighter is specific to MMA, and is not seamlessly transferrable to another individual combat sport. As one Zuffa investor presentation explains: “For a fighter to be successful in the UFC, one must be a master of multiple martial arts disciplines and maintain peak physical condition.”²⁷² A 2012 UFC management presentation states that “MMA is a Combination of Combat Sports,”²⁷³ and that “Fighters must be well-versed in a variety of different fighting disciplines.”²⁷⁴

102. Accordingly, the generalized fighting skills required for MMA competition are not seamlessly transferable with the more specialized skills required in (say) boxing. Indeed, Zuffa initially explored, but subsequently abandoned, a business model of mixing and matching different

270. *See, e.g.*, ZFL-1897652 at 694 (November 2013 text message exchange between Lorenzo Fertitta and Sean Shelby, Lorenzo asked “Should we buy Invicta” and Shelby responded “tough question... It would have to keep operating though. If Invicta went away it hurts me a lot. There just isn’t [sic] enough up-and-coming women yet.”).

271. *See e.g.*, ZUF-00031544 (Correspondence from Thomas Paschall to the Fertittas, White and others indicating that the acquisition of Pride is a “strategic/preemptive” one and that Zuffa “seriously contemplated acquiring them only to shut their business down and utilize the fighters in the UFC.”).

272. RAINE0000575 at 79. *See also* RAINE0018791 at 92 (“Different fighting styles provide distinct advantages for fighters and some styles are more effective against other certain styles. Generally, the most well-rounded fighters (masters of multiple disciplines) are the best”). *See also* Deposition of Joseph Silva at 296:2-5 (“Q. And eventually in the United States MMA developed into its own unique sport; is that right? A. Correct.”).

273. ZFL-2547712, at 24.

274. *Id.* at 27.

fighting styles (for example, pitting a judo-trained Fighter against a boxer).²⁷⁵ The highly publicized boxing match, on August 26, 2017, between undefeated (and previously retired) 40-year-old boxing champion Floyd Mayweather and Conor McGregor, the UFC lightweight (MMA) champion, was the exception that proves the rule, representing an opportunity unavailable to the vast majority of Zuffa Fighters (or boxers). Further, that the two fighters were boxing, and not engaging in an MMA bout (which includes, but is not limited to, boxing) is a further indication that MMA is a distinct sport that requires highly specialized training to compete at the highest levels.²⁷⁶

103. My conclusion that MMA is a distinct sport is even clearer for athletes in non-combat sports. For example, in response to a question regarding whether Zuffa would consider signing NFL player Greg Hardy to the UFC, Dana White stated: “It’s tough man. We’ve tried some of these things, and they don’t always work out. You’ve got to understand, a lot of these fighters have been training since they were kids, and this guy was training to play football and he became great at it. But fighting’s a whole other ball game....”²⁷⁷ Athletes who do attempt to transition from non-combat sports to MMA do not instantaneously compete at the level of UFC

275. ZFL-1838367 at 95 (“In 2001, three fans of the sport saw past the spectacle of this multi-disciplined form of combat to the true potential of MMA as a real sport where no one discipline would dominate, but rather in which athletes would need to be cross-trained in all disciplines to be victorious in the Octagon.”).

276. See, e.g., Jason Gay, *Mayweather and McGregor’s Mindless Summer Fight*, WALL STREET JOURNAL, June 15, 2017, available at <https://www.wsj.com/articles/mayweather-and-mcgregors-mindless-summer-fight-1497535595>. According to an editor of *Bloody Elbow*, although mildly competitive through the first nine rounds, the fight was more a spectacle, as McGregor was never close to a win. See, e.g., Mookie Alexander, *Six takeaways from Floyd Mayweather vs. Conor McGregor*, BLOODY ELBOW, Aug. 27, 2017 (“McGregor was never going to have the stamina to go the distance, and outside of the opening round counter uppercut and I believe a 9th round body shot (that looked like a low blow), Mayweather never seemed particularly fazed by his punches. Once Mayweather knew what he was getting from Conor after the first few rounds, he was willing to walk forward and land his own shots, and to me that was the obvious sign that McGregor was on borrowed time.”).

277. Zuffa’s Response to Plaintiffs’ Requests for Admission No. 37.

Fighters, but instead accumulate years of training and experience at smaller MMA promotions.²⁷⁸

A 2012 UFC Management Presentation states unequivocally that “[a]ll UFC fighters have previous combat sports experience.”²⁷⁹

104. A market definition that encompassed Fighters from *all* MMA promoters would clearly be too broad: Although there are hundreds of non-Zuffa MMA promoters, they do not offer comparable competitive alternatives to which MMA Fighters could reasonably substitute to counteract an exercise of market power by Zuffa. As explained below, nearly all non-Zuffa promoters are small regional outfits that have none of the top Fighters in any weight class and do not even seek to compete with the UFC for talent. Indeed, even the most prominent non-Zuffa promoters do not have access to a sufficiently deep pool of talented Fighters to provide competitive matchups to advance a Zuffa Fighter’s career, thus making non-Zuffa MMA promoters an inadequate substitute. Thus, even a (not so) hypothetical monopsonist controlling only Zuffa Fighters would be able to exercise significant monopsony power. Because the Relevant Input Market and Submarket encompass Fighters associated with non-Zuffa promoters, these market definitions are likely overly broad and thus conservative, as explained below.

105. MMA promoters other than Zuffa are “highly fragmented”²⁸⁰ and have not disrupted Zuffa’s dominant position. In the words of one MMA promoter, non-Zuffa MMA

278. For example, Wes Shivers played three games in the NFL for the Atlanta Falcons in 2000, but did not begin competing in MMA events until 2007. See <http://www.sherdog.com/fighter/Wes-Shivers-49521>; see also <http://www.pro-football-reference.com/players/S/ShivWe20.htm>. Shivers fought for small promotions with the exception of a single UFC exhibition bout (in 2009) and a single Strikeforce bout (in 2010). See <http://www.sherdog.com/fighter/Wes-Shivers-49521>. Similarly, Steve Bossé retired from the North American Hockey league to pursue a career in MMA in 2007, but did not make his debut in the UFC until 2015, after competing for years in minor promotions. See <http://www.ufc.com/fighter/steve-Bosse?id;> see also <http://www.sherdog.com/fighter/Steve-Bosse-22732>.

279. ZFL-2547712, at 27 (“All UFC fighters have previous combat experience. Many of the fighters are collegiate and Olympic champions. Most have extensive experience in smaller organizations before fighting in UFC.”).

promoters are to Zuffa what “AAA baseball is to MLB.”²⁸¹ Conversely, Zuffa is recognized by industry analysts as occupying “a premier ‘major league’ MMA platform.”²⁸² Thus, Fighters at non-Zuffa promotions lack access to a “deep roster of talented fighters,”²⁸³ which limits opportunities for career advancement outside of Zuffa (while simultaneously impairing would-be rivals).²⁸⁴

106. In an internal presentation from 2010 (when Strikeforce was at the peak of its popularity), Zuffa equated Strikeforce to a “Double-A”²⁸⁵ MLB team, and regional MMA promotions to “Farm Leagues.”²⁸⁶ In response to a question about whether the UFC planned to create a “minor league,” Dana White replied, “All of the other shows out there act as minor leagues for the UFC. Guys get their experience and build their confidence in the other shows and if they are successful enough we bring them into the UFC.”²⁸⁷ As Lorenzo Fertitta noted in March 2014:

280. ZUF-000162329-382 (October 2009 Deutsche Bank Report, “\$100,000,000 Incremental Term Loan”: 356 (“...the UFC holds the dominant market position within the sport and continues to do so even as a highly fragmented group of competitors have entered the market in an attempt to emulate UFC’s success”).

281. The full quote is as follows: “‘We believe the merger of Legacy Fighting Championship and Resurrection Fighting Alliance is an exciting and logical progression of the sport,’ Legacy FC President Mick Maynard stated. ‘As AAA baseball is to MLB, we will continue to develop the best prospects by providing a proving ground and a stage for the fighters to grow that is unrivaled in the sport.’” See <http://mmajunkie.com/2016/09/legacy-fc-and-rfa-merge-to-create-new-legacy-fighting-alliance-promotion>. See also ZFL-1500311 (In 2011, a concept document detailed the objective of establishing the Asia Fighting Championship to “serve as a development/feeder league to UFC[.]”); see also MARTIN0044963 at 63 (“Sponsorship Opportunities” pamphlet for Resurrection Fighting Alliance states that RFA “serves as a developmental organization for fighters who want to get into the ... UFC.”); MARTIN0035084 (May 1, 2014 “[RFA] is truly the minor league or development league for the UFC.”).

282. ZUF-000162329-382, October 2009 Deutsche Bank Report, at 361 (“the UFC’s ability to attract the world’s most talented MMA fighters gives it a premier ‘major league’ MMA platform.”).

283. DB-ZUFFA-00006389 at 439.

284. See Part III.C.1, *infra*.

285. See ZFL-2022954 at 57.

286. *Id.*

287. See ZUF-00284193; see also Zuffa’s Response to Plaintiffs’ Request for Admission No. 24 (On April 8, 2013 at the Global Speaker Series at the Stanford Graduate School of Business in Stanford, California, Dana White stated: “Nobody ever wants to look at themselves as a feeder league to the UFC. Deal with it. You’re all feeder leagues to the UFC, okay. I want them to exist and make money because those guys create the next talent that will end up in our organization someday.”).

[w]e're lucky in the sense that for any aspiring athlete that wants to become a fighter, we're at the top of the food chain. They want to, their goal is eventually to get to the UFC. So the talent pool is kind of coming to us so we kind of have the pick of the best fighters that are potentially out there[.]²⁸⁸

107. Zuffa regularly signs the champions from other promotions—after they have been successfully groomed.²⁸⁹ MMA promoters have included “Zuffa-out” clauses in their Fighter contracts, which release those Fighters from the contract if they are given an offer to fight for Zuffa.²⁹⁰ The presence of Zuffa-out clauses indicates that these promoters have forfeited any chance at competing with Zuffa for talent, opting instead to serve as an input provider for Zuffa.²⁹¹ In a February 24, 2014 interview, Titan FC CEO Jeff Aronson explained his strategy as follows:

288. Zuffa's Response to Plaintiffs' Request for Admission No. 33.

289. For example, Zuffa signed Conor McGregor from a promotion called Cage Warriors when McGregor was a two-division champion for the promotion. *See* ZFL-2699678 (February 15, 2013 4:08:32 PM Text from Sean Shelby to Lorenzo Fertitta, page 26 of 177). *See also* Mersch V.I Tr. 93:1-6 (stating that Justin Gaethje, who was a World Series of Fighting Champion in his weight class, left the World Series of Fighting for the UFC); ZFL-12517218 (On June 22, 2014, Zuffa sought to retain the services of Invicta Champ Lauren Murphy and negotiated with Shannon Knapp to have her released to enable her to fight in UFC; she fought for the UFC on August 16, 2014); ZFL-2483396 (On December 6, 2013, UFC signed M-1 Fighter Mairbek Taisumov after negotiating his release from M-1; Mairbek competed in UFC on January 4, 2014 and remained active in UFC); ZFL-2483439 (Mairbek's release letter from M-1); ZFL-2483345 (Zuffa signed Jumabieke Tuerxun after he was released from Legend FC on December 9, 2013). *See also* ZFL-1897652 at 751 (In a May 17, 2014 text message to Dana White, Legacy's owner writes “I wanted to run something by you. I may have to start some kind of buyout when y'all want to sign one of our guys that is already scheduled on a card. I have lost several fighters lately to you that were scheduled on one of my cards and it's killing me not only from a scheduling standpoint but also financially. The latest guy was fighting in four weeks for my title. Obviously I want to see them go to the UFC and I also don't want to create any problems. I'm not sure if you care either way but out of respect I wanted to at least get your feedback. I wouldn't be expecting the UFC to be responsible for it but someone would be.”). In a November 2013 text message exchange between Lorenzo Fertitta and Sean Shelby, Lorenzo asked “Should we buy Invicta,” and Shelby responds “tough question It would have to keep operating though. If Invicta went away it hurts me a lot. There just isn't [sic] enough up-and-coming women yet.” Lorenzo responds, “What do think about just buying all of Shannon's 115lb roster?” Shelby replied, “She reportedly currently has about 8 of the top 10 in that class so if we are doing a division right now or TUF [Zuffa's “The Ultimate Fighter” reality show] right now then we would need it if we want the perceived best. So it would depend on when we intend to open up the division. If I put the word out now that we want to do something next year, women would start planning their exit now.” *See* ZFL-1897652 at 694.

290. *See, e.g.*, ZFL-2531156 (every Titan FC Fighter has Zuffa-out clause); Aronson Dep. at 33:8-34:9 (same); ZFL-2491662 (Cage Fury Fighting Championship has Zuffa-out clauses in “all of our agreements”). *See also* ZFL-2544560 (Jungle Fight permitted Fighters leave for UFC: In March 2015, Joe Silva wrote “If Koscheck doesn't work out I can put in current Jungle Fight champion Elizeu Zaleski Dos Santos. He is scheduled to fight in their main event March 28 in Sao Paulo but they are willing to let me have him. They need to know soon though so they can replace their main event.”).

291. At his deposition, Joe Silva testified that “numerous promotions ask[ed] to be official feeder shows for the UFC. That is a benefit to them.” Silva Dep. 143:7-9.

Everybody that has tried to challenge the UFC has wound up on their butt. Nobody has been able to do it. No one is going to take on Zuffa and win at this point. It's just not going to happen, and I have no aspirations to do that... I give every single fighter a 'Zuffa Out' clause... So yes, all of my guys have the ability to leave for the UFC, because every kid training in MMA has the dream of being a UFC champion. I want to be part of the facilitation of helping these guys get the fights they need.²⁹²

Similarly, in April 2011, Zuffa drafted an internal "cooperation framework" memo between the UFC and Legend FC, the purpose of which appears to have Legend FC serve as an MMA minor-league training ground for potential UFC Fighters, and to give UFC exclusivity over promising prospects developed within Legend.²⁹³ Many MMA promoters have also sold or licensed their content to Zuffa's proprietary subscription streaming service ("Fight Pass"). A promoter who has entered into an agreement with Zuffa to license or sell their content to Zuffa is unlikely to compete aggressively against Zuffa for talent.²⁹⁴

108. To be conservative, I define the Relevant Input Market to include certain Fighters from certain non-Zuffa promoters, based on data from industry-accepted tracking and ranking databases. The first of these databases is FightMetric, which tracks the round-level fighting

292. See ZFL-2531156. In April 2015, Titan FC and Zuffa began negotiating a more explicit partnership such as the one Zuffa entered into with Invicta, which would include Zuffa rights to Titan FC footage. See ZFL-2531156.

293. In exchange for support and training for Legend FC from the UFC, the UFC "gets sales rights to Legend content outside of Asia[,] a "50/50 revenue split" and "UFC signoff on all Legend media deals to ensure complementary with UFC deals." In addition, "Legend shall work exclusively with UFC (no other promotions) on these initiatives" and "UFC has first rights to recruit any Legend fighters. Legend fighters may not fight in any other promotions outside of Legend (and their home countries) without UFC approval." ZFL-2554757 (email); ZFL-2554758 (draft cooperation framework).

294. See <https://www.ufc.tv/category/fightlibrary>. Indeed, Zuffa appears to have negotiated exclusive licenses to use the vast majority of the content it puts on Fight Pass, leaving promoters with few other options for broadcast revenue. See ZFL-1704928 (a May 2015 spreadsheet listing MMA Library licensing status). For example, Titan FC's exclusive license agreement with Zuffa pays Titan \$75,000 per show put on Fight Pass; the payment increases only if Zuffa exercises an option to extend the contract after the third year. Aronson Dep. at 82:14-83:10. See also Aronson Ex. 13, 14 (Fight Pass License Agreement for Titan FC). This gave Titan FC a strong incentive not to compete directly against Zuffa for talent or do anything else that might jeopardize their "excellent relationship with the UFC." Aronson Dep. at 51:9-12; 92:8-93:16. Indeed, as Dana White explained the strategy in a January 2014 text to Lorenzo Fertitta: "Our deal should be just like our fight pass deals we should have locked up all the rights to all the famous fighters like Ali, Foreman, etc[.] We should start thinking about literally owning fighting/combat sports[.]" ZFL-2699678.

statistics of Fighters associated with the “most prominent [MMA] organizations in the world,”²⁹⁵ and is the “the official statistics provider to the UFC.”²⁹⁶ As noted above, FightMetric data have been used in prior academic work.²⁹⁷ In addition, Joe Silva testified that FightMetric data were perceived in the industry as “very credible.”²⁹⁸ The second database used to measure the Relevant Input Market is FightMatrix (not to be confused with FightMetric), which is a global MMA Fighter ranking system that ranks MMA Fighters by weight class, including up to 650 Fighters per weight class.²⁹⁹ FightMatrix is recognized by Zuffa itself as an authoritative source of MMA Fighter rankings.³⁰⁰

109. Under the “Tracked” measure, all Fighters who fought for an MMA promoter included in the FightMetric database (which “tracks” Fighter performance) are (conservatively) included in the Relevant Input Market. In addition to the MMA promoters covered in the FightMetric data, I conservatively designate all Fighters associated with MMA promoters acquired by Zuffa in this measure of the input market.³⁰¹ As seen in Table 2, the Fighters covered under this measure of the Relevant Input Market include those affiliated with Affliction, Bellator, Dream, EliteXC, Pride, Strikeforce, UFC, World Extreme Cagefighting, and World Fighting Alliance. As

295. E-mail from Remi Genauer, Director, FightMetric, to Economists Incorporated (Nov. 19, 2016, 19:48 ET).

296. FightMetric, About the Company, available at <http://www.fightmetric.com/company>. See also Trevor Collier, Andrew Johnson & John Ruggiero, *Aggression in Mixed Martial Arts: An Analysis of the Likelihood of Winning a Decision*, in 4 VIOLENCE AND AGGRESSION IN SPORTING CONTESTS, SPORTS ECONOMICS, MANAGEMENT AND POLICY SERIES, 97-109, 98 (Springer 2011).

297. See Part I.B.

298. Silva Dep. at 162:19-164:18.

299. According to its website, the FightMatrix ratings system “takes an unbiased, objective look at all available professional MMA results from day 1 to the present.” See <http://www.fightmatrix.com/faq/>.

300. See Deposition of Javier Vasquez, February 14, 2017 at 67, Exhibits 42-44.

301. Record evidence indicates that Zuffa’s acquisitions targeted perceived rivals, or promoters viewed as potential rivals. See Part II.A (summarizing Zuffa’s horizontal acquisitions). This definition is likely over-inclusive: A potential future rival is not the same as an actual rival. In addition, there is evidence that Zuffa sometimes acquired rivals to “to serve as a venue in which to groom up-and-coming talent”—that is, to serve a more complementary role. See Ken Pishna & Ivan Trembow, *UFC Buying World Extreme Cagefighting*, MMA WEEKLY, Dec. 11, 2006.

seen below, with the exception of Bellator, all of these promoters have gone out of business or been acquired by Zuffa.

TABLE 2: PROMOTERS ASSOCIATED WITH FIGHTERS IN THE RELEVANT INPUT MARKET
(MEASURED BY TRACKED FIGHTERS)

Promoter Name	In FightMetric?	Owned/Acquired by Zuffa?	Final Year
World Extreme Cagefighting	X	X	2006
World Fighting Alliance		X	2006
Pride Fighting Championships	X	X	2007
EliteXC ³⁰²	X		2008
Affliction	X	X	2009
Strikeforce	X	X	2011
Dream	X		2012
Bellator	X		N/A
UFC	X	X	N/A

110. The second, “Ranked” measure expands the Relevant Input Market relative to the first measure: The Ranked measure includes (1) all Fighters encompassed by the “Tracked” measure; and (2) any Fighter ranked in the FightMatrix database. In addition, the Ranked measure also includes the Asian MMA promoter ONE Championship. ONE Championship has a large presence in Asia, and, according to Zuffa, is the only international MMA promoter that potentially competes with Zuffa for talent.³⁰³ Including ONE Championship is conservative, given that ONE Championship has made only limited inroads outside of Asia.³⁰⁴ According to FightMatrix, even

302. Although EliteXC was not directly acquired by Zuffa, its parent, Pro Elite, was acquired by Strikeforce shortly after EliteXC ceased promoting bouts. *See* Coker Tr. 23:4-8 (“We went out, we bought Pro Elite, and with buying Pro Elite came 40, 50 top fighters from around the world.”). Thus, Zuffa ultimately realized the benefits of that acquisition when it acquired Strikeforce in 2011.

303. *See* Part III.A.3, *infra*.

304. For example, only a single Fighter from ONE Championship appears among the 165 slots delineating top-ranked MMA Fighters in the *USA Today/MMA Junkie* ratings. *See* <http://mmajunkie.com/rankings> (accessed April 18, 2017).

an undefeated record in ONE Championship does not necessarily advance a Fighter's rank, due to a lack of high-quality opponents.³⁰⁵

111. It bears emphasis that both the "Tracked and "Ranked" measures of the Relevant Input Market are quite conservative, given that even the most prominent non-Zuffa promoters are inferior substitutes from the perspective of Fighters. The list of MMA promoters associated with Fighters included in the Ranked measure includes the World Series of Fighting, M-1 Challenge, King of the Cage, and many others; the list of MMA promoters varies substantially over time: As of 2001, there were 83 MMA promoters. By 2009, there were 429. As of 2016, there were 213 MMA promoters associated with Fighters included in the Ranked measure.³⁰⁶

112. Under the "Headliner" measure, the Relevant Input Submarket includes each of the top fifteen Fighters in any of the ten major MMA weight classes tracked in the *USA Today/MMA Junkie* rankings, according to the FightMatrix ranking database.³⁰⁷ There are no close substitutes for Headliners. As explained in Part I.A, MMA promoters rely on top-ranked Fighters at the Top of the Card to draw audiences and viewers to Live MMA Events; for the same reason, fighting at the Top of the Card is the primary career objective for an MMA Fighter. This objective can be achieved only by defeating other highly-ranked Fighters.³⁰⁸

113. Additional evidence confirms that Zuffa relies heavily on Headliners to fill the Top of the Card: In 129 of the 159 UFC PPV events from 2005 to May 2017, both of the Fighters at the

305. FightMatrix notes that "Fighters not in the UFC do not always have access to top competition. This can lead to a gradual decline in rankings," for example, "#33 Ben Askren has gone undefeated in One Championship, but his ranking points have fallen from 376, when he signed, all the way down to 169." Richard Mann, "Ranking Points for Highest Ranked Fighter by Promotion" *FightMatrix* (August 3, 2016).

306. To clarify, not all Fighters affiliated with these promoters are included; only those that are ranked by FightMatrix are in the Relevant Input Market.

307. The FightMatrix rankings are used instead of the *USA Today/MMA Junkie* rankings because the former are consistently available over time.

308. Silva Dep. 129:10-21 ("Beating guys with crappy records won't convince anyone [a fighter is] ready for the big leagues."); Margules Dep. at 85:17-86:13 ("Only ... if they are ranked in the top 15 will they qualify.").

Top of the Card were Headliners. At least one of the Fighters at the Top of the Card was a Headliner in 158 of these 159 events.³⁰⁹ Similarly, a *Sports Business Journal* analysis cited by UFC personnel concluded that:

History tells us that for a pay-per-view to do big numbers, it needs marquee names: Chuck Liddell, Brock Lesnar, Rampage Jackson and Georges St-Pierre. Even if you don't know an arm bar from a rear naked choke, you've probably heard of those four, who from 2006 to today carried the highest pay-per-view averages of any main event fighter in MMA. During that span, those four fighters [] accounted for 17 of the 25 highest-selling pay-per-views. They held 11 of the top 14 slots, eight of the top 10, and six of the seven events that have exceeded a million...Exciting fights and a strong UFC brand can drive ratings and sell tickets, but *sales estimates from the last nine years make it clear that it's the name at the top of the card that sells pay-per-views...* "Stars matter when you look at buys, and that's not exclusive to the UFC," said Alex Kaplan, vice president of revenue and product marketing at DirecTV, who is responsible for pay-per-view at the company.³¹⁰

The significance of Headliners to Zuffa is further confirmed by Joe Silva's use of consensus rankings in 2011—showing that UFC Fighters accounted for the majority of the top twenty-five and top ten Fighters in each of seven weight classes—to demonstrate the UFC's dominance to Zuffa management.³¹¹

114. The Headliner measure of the Relevant Input Submarket is conservative because it includes Fighters associated with many non-Zuffa promoters. The list of MMA promoters associated with Fighters included in the Relevant Input Submarket includes Affliction, EliteXC, Gladiator Challenge, King of the Cage, Pancreas, and more than 250 others from 2001 to 2016. As of 2001, there were 47 MMA promoters associated with Fighters included in the Relevant Input Submarket. By 2009, there were 44. As of 2016, only six remained: UFC, Bellator, Invicta, M-1 Global, Titan Fighting Championship, and the World Series of Fighting.

309. Over this time period, more than 80 percent of Zuffa's Event Revenue was derived from PPV events.

310. WME_ZUFFA_00031950-60 (emphasis added).

311. ZUF-00085896-901 (2011 e-mail from Joe Silva to Dana White, Lorenzo Fertitta, and Sean Shelby, showing that UFC Fighters account for the majority of the top twenty-five and top ten Fighters in each of seven weight classes; subject line reads "We Own MMA").

2. The Relevant Output Market

115. I define the Relevant Output Market as Live MMA Events in which the participating Fighters are in either the Relevant Input Market (however measured) or the Relevant Input Submarket. In the Relevant Output Market, MMA Promoters are the sellers; their customers include viewers, cable networks, broadcast networks, and sponsors. As in other professional sports, the demand for Live MMA Events is ultimately driven by audience preferences. As explained below, record evidence indicates that Live MMA Events are a separate product market, and that audiences do not view other combat sports (such as boxing or professional wrestling) to be reasonably close substitutes. To the contrary—as Zuffa and third parties recognize—Live MMA Events are perceived as a separate category of sports entertainment, just as games produced by Major League Baseball are separate from those produced by the National Football League.³¹² Finally, as explained below, Live MMA Events featuring Fighters not within either the Relevant Input Market or the Relevant Input Submarket are not reasonable substitutes for events in the Relevant Output Market, and are therefore excluded from the Relevant Output Market.

116. Record evidence indicates that the degree of competition between boxing and MMA is limited, with low crossover between audiences.³¹³ Industry analysts have noted that

312. See Part III.A.8, *supra* (showing that WME-ING viewed the UFC as a league unto itself prior to acquiring Zuffa, and that Zuffa considers itself a separate league, comparable to MLB, NFL, etc.).

313. See ZFL-2528642: 3/24/2015, Jackie Poriadjian to Gary Cook, re: ESPN signing Premier Boxing Championships: “. . . historically not big cross over audience.” See also ZFL-1096310: 3/26/2015, Doug Hartling to Jackie Poriadjian in response to Zuffa concerns over ESPN signing Premier Boxing Championships (PBC) to weekly programming: “Of the total audience that tuned in to UFC Fight Night Boston (4,386,000), 507,000 (or 11.5%) also tuned in to PBC on NBC on March 7. “Of the total audience that tuned in to UFC Fight Night Stockholm (5,771,000), 1,016,000 (17.6%) also tuned in to PBC on NBC on March 7. See also ZFL-2477398: 3/5/2013: “[O]f the HHs that bought the latest Mayweather fight, only 9.4% purchased a UFC event in the UFC 154 – present window. This indicates a much lower crossover among their subscribers than the latest Crop research shows. Of this group, only 2.3% purchased UFC 160.” ZFL-2477398, at 2. See also ZFL-2528842: 5/10/2012, Caren Bell to UFC Executives - Analysis of a ratings disaster for a UFC event on FOX (“The show did 34% below what COPS was doing this season in the same time slot. . . . It was the lowest rating for a network TV MMA show in history”). On whether a PPV boxing event (Mayweather/Cotto) that night, or other sporting events, affected UFC's ratings: “The boxing is not an

boxing is a “very strategic sport that requires discipline and self-control in fighting style,” whereas the coveted 18-to-34 male demographic (the primary MMA audience), are seeking more “knockout” moments and “raw” hand-to-hand combat.³¹⁴ Boxing is differentiated from MMA along several dimensions, including predictability³¹⁵ and weight-class gradations. For most UFC events, there is no near-term, marquee boxing event to which viewers could substitute, even if they were inclined to do so. Marshall Zelaznik, Zuffa’s Chief Content Officer, testified that Zuffa’s exclusive venue clauses were intended to “avoid confusion with other mixed martial arts promoters,” but that “[w]e didn’t believe that there would be confusion around a boxing event or wrestling or judo[.]”³¹⁶

excuse, only because Manny Pacquiao fought Juan Manuel Marquez and did 1.41 million buys on PPV the same night as Cain Velasquez vs. Junior Dos Santos became, by far, the most-watched MMA fight ever in U.S. television, with the fight itself doing 9.5 million viewers between FOX and Fox Deportes.” ZFL-2528842, at 2. “8% said they skipped it to watch the Mayweather fight.” ZFL-2528842, at 3. “5% said they were watching sports other than boxing that night.” ZFL-2528842, at 3.

314. DB-ZUFFA-00006389 at 438 (“Boxing is a very strategic sport that requires discipline and self-control in fighting style. They are required to maintain their stamina for 12 rounds and as a result, don’t always engage in ‘all-out punching contest.’ While that may appeal to older fans, who might have grown up watching Mike Tyson and Evander Holyfield, the newer generation of fans are seeking more ‘knockout’ moments and ‘raw’ hand-to-hand combat. The 18-34 male audience is the primary demographic of MMA and also happens to be the most coveted demographic in advertising[.]”).

315. DB-ZUFFA-00006389 at 438 (“Boxing is predictable and the fighting is governed by a long list of rules. Whereas the diversity of styles used by fighters in MMA makes the sport far more interesting, explosive and exciting to watch. As MMA fans continue to point out, a fighter in boxing only has two weapons but a fighter in UFC has four[.]”).

316. Deposition of Marshall Zelaznik, February 8, 2017 at 65:17-66:9 (“Q Would you say boxing is comparable to mixed martial arts?...THE WITNESS: In the sense that it’s combat, it’s similar. In the style of fighting they use, it’s not similar. Q...Would you say that there was not a risk of confusion between mixed martial arts and boxing?...THE WITNESS: I think our concern about confusion was related to MMA. We didn’t believe that there would be confusion around a boxing event or wrestling or judo[.]”). *See also* Mossholder Deposition (November 30, 2016), at 91:16-24 (“Q. Did Zuffa’s ability to negotiate exclusivity language such as this in its contracts change at all over time? A. Standard language changed in the early days. Consumer confusion could include boxing, it could include WWE. As -- as the sport became more mainstream and understood as what the product is, there was less consumer confusion and so that language changed.”) *Id.* at 95:13-23 (“A. Consumer confusion, again, as stated earlier; consumer confusion around boxing and WWE was -- in the infancy of the UFC was an issue. And as we have grown in -- in scale and brand awareness, it is less of an issue today. Q. So today Zuffa’s not worried about consumer confusion between MMA and boxing or wrestling? A. It’s less. We still have concerns, but it is less of a concern than it was, you know, a decade ago.”). Mr. Mossholder served as Executive Vice President for Global Marketing Partnership for Zuffa beginning in 2011.

117. Professional wrestling such as World Wrestling Entertainment (“WWE”) differs qualitatively from MMA in that the former consists of staged events with preordained outcomes. Unlike MMA Fighters, professional wrestlers are “trained stunt performers,”³¹⁷ with a format that “eschews real competition for scripted plotlines.”³¹⁸ MMA promoter contracts reflect a lack of competition with professional wrestling. For example, a 2007 agreement between Zuffa and the Endeavor Agency prohibits Endeavor from representing other MMA businesses, but explicitly allows Endeavor to “continue to represent World Wrestling Entertainment.”³¹⁹ Similarly, a television license deal between WEC and Setanta Australia contains exclusivity language, but the language does not apply to WWE (or to boxing).³²⁰ MMA has also exhibited much faster growth and greater profitability than professional wrestling, indicating that wrestling likely could not lure a sufficient number of MMA viewers/advertisers to defeat a price increase by a hypothetical monopoly provider of Live MMA Events.³²¹

118. Record evidence also indicates that customers view other, non-combat sports as complements to Live MMA Events, rather than economic substitutes. Part of a 2011 agreement between Zuffa and Fox included “intensive cross-promotion between UFC and FOX’s

317. Andrew Brennan, *Professional Wrestlers Must Realize They Can’t Enter The MMA Or The UFC; It’s Not A Scripted Fight*, FORBES, Oct. 31, 2016.

318. Chris Smith, *UFC Vs. WWE: How Much More Is Real Fighting Worth?*, FORBES, July 12, 2016.

319. “Endeavor shall not represent any companies which own or control mixed martial arts businesses which directly compete with [Zuffa’s promotions, Pride, WEC, and UFC]. By way of example only, businesses which Endeavor could not represent during the term would include K-1 or Elite XC, but Endeavor may continue to represent World Wrestling Entertainment.” See ZFL-2613931 at 32 (Pride agreement); ZFL-2613939 at 40 (WEC Agreement), ZFL-2613946 at 47 (UFC Agreement).

320. See ZFL-2614687 at 88.

321. Chris Smith, *UFC vs. WWE: How Much More Is Real Fighting Worth?*, FORBES, July 12, 2016.

programming, likely including NFL, NASCAR and MLB broadcasts.”³²² Economic complements cannot constrain the pricing of each other, and thus are not part of the same product market.³²³

119. Finally, Live MMA Events featuring Fighters outside the Relevant Input Market are not reasonable substitutes for Zuffa events. Non-Zuffa MMA promoters are poor substitutes to Zuffa from the perspective of Fighters.³²⁴ The same holds true from the perspective of audiences: As explained in Part III.C.1 (below), non-Zuffa promotions lack access, among other things, to “the talent necessary to stage a successful event,”³²⁵ which makes them inferior substitutes from the perspective of audiences. It bears emphasis that this definition of the Relevant Output Market is conservative, for the same reason that my definition of the Relevant Input Market is conservative: Events promoted by even the most prominent non-Zuffa promoters are distant substitutes for Zuffa.

322. DB-ZUFFA-00006389 at 392.

323. *See, e.g.*, Merger Guidelines §4.1.1 (showing that product markets are defined using substitutes, not complements).

324. *See* Parts III.A.1; III.A.8, *supra*.

325. DB-ZUFFA-00006389 at 392.

3. The Relevant Geographic Market

120. According to basic principles of antitrust economics, the Relevant Geographic Market is defined using a SSNIP test directly analogous to that used in product market definition.³²⁶ In the case of geographic markets, the SSNIP test asks whether a hypothetical monopolist within a given geographic region could profitably impose a small but significant and non-transitory increase in price above competitive levels—or, in the case of a monopsonist, a decrease in the price (or wage) below competitive levels.

121. With respect to the Relevant Output Market, I define the relevant geographic market as encompassing Live MMA Events in the Relevant Output Market broadcast in North America. Viewer substitution outside of the North American market is limited by time-zone differences,³²⁷ as well as by local or regional fan bases, which drive demand for Live MMA Events.³²⁸ Victor Cui, CEO and owner of ONE Championship, an MMA promoter based on Singapore, stated in a 2016 interview that “UFC has got a 90-percent market share in the [United] [S]tates. We’ve got a 90-percent market share in Asia... [W]e’ve catered to our audience—the

326. *Merger Guidelines* §4.2.

327. DB-ZUFFA-00007249 at 54 (“Global audiences are dominated by viewership in the US for a majority of time slots. The US has the highest audience for all time slots in which the event was televised in the US.”), and at 56 (“10am isn’t optimal for Europe and has the largest negative impact on the US. 12:00/13:00 are optimal for European prime time but have the largest negative impact on Asia.”).

328. RAINE0018791 at 804 (“International rights fees are driven primarily by growth of the UFC fan base in that region. This fan base is exemplified through TV ratings, social media following, and media coverage of events... Local talent plays a large factor in the speed of a market’s development, to this end the UFC invests in talent through two primary vehicles, Fighter Development Programs and local created content such as international versions of *The Ultimate Fighter*.”). *See also* ZFL-2235745 at 56. According to a survey done by Applied Analysis for Zuffa, out of all attendees at UFC 94, 71.8% were from the United States, and 27.5% were from Canada. The presentation notes that one of the Fighters in the event originated from Canada, which is assumed to have materially impacted the distribution of the origin of respondents. *Id.* *See also* ZFL-2554757; ZFL-2554758 (comments on an April 2011 “cooperation framework” memo between the UFC and Legend FC state that “we should limit them to grow sport in China (that is all they should be focused on in my mind-don’t want them branching out beyond that for now)...”). *See also* ZFL-2689504 (When Zuffa negotiated exclusivity provisions with local broadcasters abroad, Zuffa sometimes allowed an exemption for events “held and produced” in the local country. For example, in a 2007 negotiation with NTV-Plus, a Russian broadcaster, Zelaznik noted “I think this should be OK as the intent is to allow them to air Russian based promotions not US/UK based.”). This suggests that Zuffa was not concerned about brand confusion between Russian promoters and U.S. promoters.

Asian MMA fans who have been pinning for authentic Asian MMA action and on a world-stage[.]”³²⁹ Conversely, Cui stated in another interview that Fighters in the mold of UFC superstar Conor McGregor were not suited to the Asian market.³³⁰

122. Starting with a single event in 2011, ONE Championship has grown rapidly in Asia, and is scheduled to host 24 events in 2017.³³¹ Its website touts its “90% market share in Asia,”³³² “90% of the best world champions and fighters in Asia,”³³³ and claims an “avid MMA fan base across top Asian markets” of approximately 563 million.³³⁴ As ONE Chairman Chatri Sityodtong stated in an interview, “[w]e are focused on unearthing the greatest martial arts stars in each country, so every country has a world champion, one of the best martial artists in the world to root for that really links to their own history, heritage and their values....”³³⁵ Sean Shelby, a matchmaker with the UFC, also stated that fight promotions in Asia could have “their own set of

329. James Edwards, *ONE Championship and UFC is the story of East and West in the MMA market*, INDEPENDENT, April 19, 2016 (“UFC has got a 90-percent market share in the [United] [S]tates. We’ve got a 90-percent market share in Asia...[W]e’ve catered to our audience - the Asian MMA fans who have been pinning for authentic Asian MMA action and on a world-stage, to be showcased in front of potentially a billion viewers worldwide.” When Cui referenced “the 1 billion viewers, he was speaking in part about the new TV deal they [ONE FC] announced last weekend with the largest TV broadcaster in the Philippines, ABS-CBN.”).

330. Nick Baldwin, *CEO Victor Cui explains why Conor McGregor isn’t suitable for ONE Championship*, BLOODY ELBOW, May 22, 2017, available at <http://www.bloodyelbow.com/2017/5/22/15677574/ceo-victor-cui-explains-why-conor-mcgregor-isnt-suitable-for-one-championship-mma-ufc-news> (“A big part of what drives the spirit of ONE Championship is really just the belief that martial arts makes the world a better place. Of course want it to be successful business, of course we want to continue to grow in a successful business enterprise. That philosophy of we’re making the world a better place permeates throughout the entire organization. I think it’s something our fans really appreciate in Asia.”). According to ONE Championship chairman Chatri Sityodtong, McGregor’s demeanor could be problematic for an Asian promoter. *Id.* (“Let’s say we had a press conference in China and he [McGregor] threw a water bottle, I would go to jail. They’d put me in jail. I’m not kidding around.”).

331. See Tony Mogan, *ONE Championship: Asia’s MMA powerhouse plays up its differences to UFC in battle for supremacy*, INTERNATIONAL BUSINESS TIMES, Jan. 21, 2017 (“UFC’s 4bn takeover symbolised the huge rise in MMA in 2016 but that growth has not spread to the East. In 2014, they held five events in the continent. In 2015 it shrunk to three. In 2016, it was just one. None are on the horizon for 2017. ONE, meanwhile hosted a single event in 2011 while in 2017 it will be 24.”).

332. See <https://onefc.com/about-one/>.

333. *Id.*

334. *Id.*

335. See Mogan, *supra*.

stars.”³³⁶ Similarly, Joe Silva testified that foreign Fighters must compete in the United States before they can achieve stardom here, and that there exist different fan bases in different geographies, with differentiated preferences.³³⁷

123. A hypothetical monopolist imposing a SSNIP on Live MMA Events in the Relevant Output Market broadcast within North America would not be constrained by viewer substitution to Live MMA Events broadcast outside of North America. For example, although the price of a UFC PPV event broadcast in North America is in the range of \$50 or more, ONE Championship has sold online access to its own PPV events in North America for \$9.99, beginning at least as early as 2013,³³⁸ and continuing into 2017.³³⁹ That Zuffa can charge North American customers at least five times as much as One Championship indicates that the Relevant Geographic Market for Live MMA Events is not global.³⁴⁰ ONE Championship has made only limited inroads outside Asia; it

336. Deposition of Sean Shelby, April 12, 2017, at 195:9-196:19. (“Q: In what way [is Pancrase different from promotions like RFA]? A: I would say it’s a bit different in that, you know, it’s a fight promotion based out of Japan rather than something out of, you know, this part of the world, North America. Q: So the difference between Pancrase and RFA is geographic? . . . THE WITNESS: Yeah, no, I didn’t – it would be a little bit different, because they could have their own set of stars over there that drive it, and so they might have a fighter that’s worth something to them. I don’t know, but in that area. And so again, when we talked about earlier, stars come in all different shapes and sizes, and over there they might have somebody that’s a star to them. So it’s a little bit different thing.”).

337. Deposition of Joseph Silva at 52:12-20 (“Q. So in your opinion, American fans are all things equal more interested in fighters that are known to Americans?...THE WITNESS: I think that’s wherever you’re at. I think in Japan they’re more interested in the fighters in Japan. You’re interested in who you’re familiar with until you become familiar with them.”). *See also* Silva Dep. at 42:7-13 (“A. ...if you only fought in Japan, you were not a big name to anybody in the United States”); *id.* at 294:4-8 (“Q. I see. And success, say, in China or the Philippines wouldn’t translate to U.S.; is that right? A. Correct or Korea or anywhere else it’s all very specific. Q. So the business and the industry is very culture or country specific in your opinion? A. Yeah, it can be.”).

338. Riley Kontek, *4 Reasons MMA Fans Should Pay Attention to One FC*, BLEACHER REPORT, May 30, 2013 (“With UFC pay-per-views hovering around the \$50 range, wouldn’t it be nice to get a high-quality pay-per-view streaming live for something more affordable to the average Joe? Well, One FC will be running its pay-per-view this weekend for \$9.99 from their website.”).

339. *See* <https://onefc.com/livestream/> (“Catch all the events live with ONE Championship’s official livestream. Purchase the HD livestream now at only US\$9.99 (service charges apply). Replays are available up till 14 days after the conclusion of the live event. ONE: KINGS OF DESTINY livestream starts at 8.30PM, Manila time [8:30AM EDT] (Main card).” (accessed April 19, 2017)).

340. Conversely, record evidence indicates that Zuffa charges lower ticket prices and lower PPV prices outside of North America. *See* DB-ZUFFA-00006389 at 426 (“Ticket prices in Brazil are not as high as the ones in North America. Prices for PPV buys are also not as high in Brazil as in North America. While PPV subscriptions are higher in Brazil, they are not high in North America for Brazilian fights as it is more difficult to market a fight in Brazil in

accounts for just one out of 165 top-ranked MMA listings in the *USA Today/MMA Junkie* ratings.³⁴¹

124. With respect to the Relevant Input Market and Submarket, I define the relevant geographic market as North America. As explained above, although ONE Championship is outside of the Relevant Geographic Market, I conservatively include it in the Ranked measure of the Relevant Input Market.

125. For the Relevant Input Market, the boundaries of the Relevant Geographic Market turn on the extent to which MMA Fighters would substitute towards MMA promoters in different geographies in the event of a small but significant and non-transitory decrease in Fighter compensation below competitive levels. A 2014 Zuffa document summarizing all of the “International MMA Leagues...we keep an eye out to scout for talent,”³⁴² indicates that international promoters are not “actively competing for talent with UFC,”³⁴³ but instead grant their Fighters “UFC-out” clauses in the event that a Fighter has the opportunity to compete in the UFC.³⁴⁴ Accordingly, Fighters associated with most (if not all) international promoters are properly excluded from the Relevant Geographic Market.

126. The document states explicitly that the only exception is ONE Championship, which Zuffa identifies as the “only [international] league we consider a ‘competitor’ from that

North America due to reduced media coverage. The above results in lower margins in the Brazil market versus North America.”).

341. See <http://mmajunkie.com/rankings> (accessed April 18, 2017).

342. ZFL-0885147-49 (In 2014, Zuffa drafted a document summarizing all of the “International MMA Leagues...we keep an eye out to scout for talent.” The document notes that “[w]e consider the leagues listed below as the aggregators of talent in the country/region. There are smaller leagues below them, but any good talent ends up in the ones outlined below. Most of the leagues listed below have “UFC out” in their fighter contracts, meaning if UFC wants to sign any of their fighters, the fighter can break his or her existing contract without any penalties. The only league we consider a ‘competitor’ from that stand point (e.g. actively competing for talent with UFC in the region, and not allowing fighters to freely jump to UFC if offered a contract from us) is One FC in Asia.”).

343. *Id.*

344. *Id.*

stand point (e.g. actively competing for talent with UFC in the region, and not allowing Fighters to freely jump to UFC if offered a contract from us).”³⁴⁵ ONE Championship has “occasionally serv[ed] as a player for high-value free agents like former Bellator champion Ben Askren.”³⁴⁶ Yet Askren has seen his ranking slip, despite an undefeated record at ONE Championship, due to a lack of high-quality opponents.³⁴⁷

127. ONE Championship also offered itself as a “feeder organization to UFC,” indicating that ONE Championship did not see itself as a direct competitor to Zuffa.³⁴⁸ Furthermore, a Zuffa Executive Vice President and managing Director of UFC in Asia was quoted in May 2013 as saying that he did not view ONE Championship as a competitor, but instead as a minor league helping to increase interest in the sport.³⁴⁹ Thus, the extent to which Fighters perceive ONE Championship to be a competitive alternative purchaser of Fighter services is dubious. Nevertheless, although ONE Championship is outside of the Relevant Geographic

³⁴⁵. *Id.*

³⁴⁶. Shaun Al-Shatti, *ONE Championship’s Victor Cui: ‘We’ve gotten a lot of interest’ since UFC-Reebok deal*, MMA FIGHTING, May 21, 2015.

³⁴⁷. Richard Mann, *Ranking Points for Highest Ranked Fighter by Promotion*, FIGHTMATRIX. Aug. 3, 2016. *See also* Shaun Al-Shatti, *Where in the world has Ben Askren been? Well, it’s complicated...* MMA FIGHTING (April 28, 2017) (“When Ben Askren signed with ONE Championship in late 2013, he was widely considered to be one of the most talented welterweight fighters in the world. He quickly did what many observers expected him to do, too, blitzing through back-to-back opponents to capture the ONE welterweight title with ease by mid-2014. But these days, nearly three years after he became ONE’s welterweight king, Askren still has yet to defend his belt in any official capacity, and not for a lack of trying.”).

³⁴⁸. In 2011, Victor Cui of One League wrote that “I believe that ONE FC is well positioned to be a feeder organization to UFC and if you have an interest in any of our fighters, I would be more than willing to offer them to UFC and to support you in as many ways possible.” *See* ZFL-1501599. Also, when Sean Shelby was trying to organize a UFC fight in Singapore in 2013, he wrote that although “it’s not normally possible” to get One FC Fighters released from their contract he would “see if I can pull [Leandro] Issa out from his one FC fight” to fight for Zuffa in Singapore. ZFL-1886668; ZFI-1897060 at 158.

³⁴⁹. Zuffa’s Response to Plaintiffs’ Request for Admission No. 256, 263. In addition, when Mark Fischer at UFC Asia noted in August 2012 that One FC “reportedly ...[has] ‘teams’ of people running around Asia trying to lock up fighters to 3-year or 5-year contracts, to corner the market vs all comers (including us)” that revelation appeared to cause little concern among Zuffa executives. *See* ZFL-2552141 at 41-42 (“Anyway, if you guys don’t see a problem with all this, then neither do I.”).

Market, as noted above, I conservatively include ONE Championship in my Ranked measure (the broadest measure of the Relevant Input Market).

4. Zuffa's Dominant Share in The Relevant Input Market and Submarket

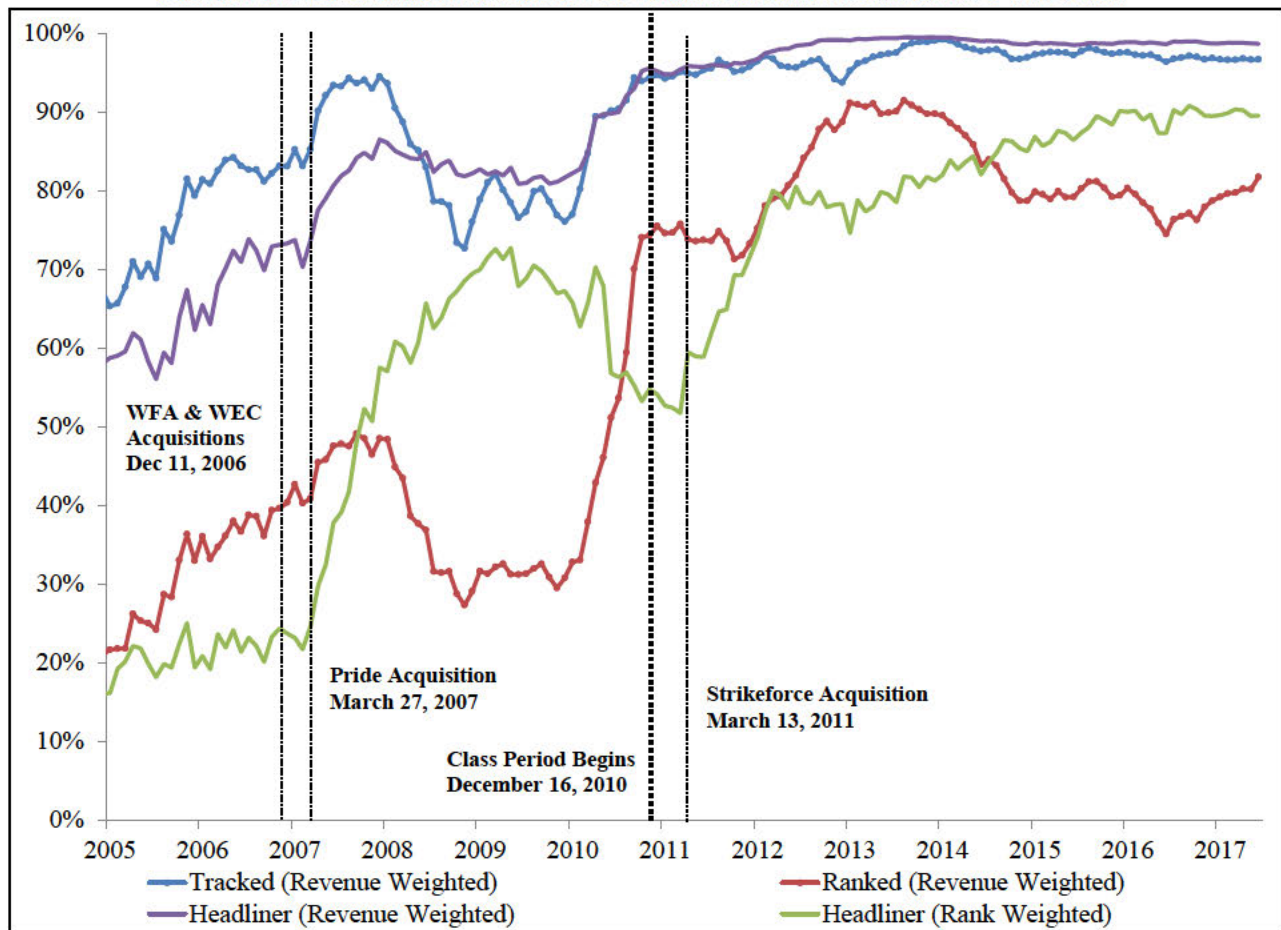
128. To calculate Zuffa Fighters' share of the Relevant Input Market and Submarket (or Zuffa's share as a buyer), I divided the number of Zuffa's MMA Fighters by the total number of MMA Fighters in the Relevant Input Market and Submarket. Fighters in the Relevant Input Market were weighted by their associated promoters' PPV and gate revenues per Fighter, to reflect differences in the average quality of Fighters across different MMA promoters.³⁵⁰ Using unweighted Fighter counts makes little economic sense, given that Fighters (even within the defined Relevant Input Market and Submarket) are not homogeneous, and instead vary in their ability to attract viewers—and hence their value to an MMA promoter. For the Relevant Input Submarket, I also calculate an alternative metric in which Fighters are ranked by the inverse of their rank according to FightMatrix.

129. Figure 1 displays Zuffa's market share of the Relevant Input Market (measured both ways) and the Relevant Input Submarket from 2005 through June 2017. From the start of the Class Period through June 2017, Zuffa's share of the Relevant Input Market has fluctuated between 94 and 99 percent (using the Tracked measure) and between 71 and 91 percent (using the

350. This approach is conservative because revenue data are available only for (relatively) large non-Zuffa MMA promotions such as Bellator and Strikeforce, so that Fighters from smaller promotions (which lack such data) receive the same weight as if they were affiliated with a larger promotion. Using public sources, I constructed a database of PPV revenue and gate revenue by promoter. Zuffa Fighters were weighted by the average revenue per Zuffa Fighter. Non-Zuffa Fighters were weighted by the average revenue per Fighter for non-Zuffa promoters. In the case of ONE Championship, I conservatively assigned Fighters a weight equal to 25 percent of Zuffa Fighters' weight, in light of evidence that ONE's valuation was reportedly "approaching" a valuation of \$1B at approximately the same point in time that Zuffa sold for \$4B. *See* Appendix 2 for details. *See also* James Goyder, *ONE Championship receives multimillion dollar investment from Singapore fund*, MMA MANIA, July 14, 2016 ("[T]he company is on course for a billion-dollar valuation...The UFC was sold for \$4 billion to a group led by WME-IMG and ONE Championship is on course for an IPO in the next 12 to 18 months.").

Ranked measure). From the start of the Class Period through June 2017, Zuffa's share of the Relevant Input Submarket has fluctuated between 95 and 99 percent (if Fighters are weighted by revenue) and between 52 and 91 percent (if Fighters are weighted by the inverse of their FightMatrix rank). From December 2011 through June 2017, Zuffa's share of the Relevant Input Submarket (however weighted) always exceeds 70 percent.³⁵¹

FIGURE 1: ZUFFA MARKET SHARE OF RELEVANT INPUT MARKET OVER TIME



351. Even this metric understates Zuffa's share in the Relevant Input Submarket, given that Zuffa's share is disproportionately high in the most prominent weight classes *See* McGowan & Mahon, *supra*, at 1045 ("In regards to the title effects, welterweight (+223K/+227K), heavyweight (+196K/+202K), and light heavyweight (+134K/+130K) have the largest positive effects on [the UFC PPV] buy rate."). Among these three most prominent and important weight classes, Zuffa's (inverse rank-weighted) share has always exceeded 80 percent since the beginning of the Class Period.

5. Zuffa's Dominant Share in The Relevant Output Market

130. Zuffa's market share in the Relevant Output Market is the ratio of Zuffa's total revenue in the Relevant Output Market to the total revenues of all (Zuffa and non-Zuffa) MMA promoters in the Relevant Output Market. Although revenue data are not available for all non-Zuffa promoters in the Relevant Output Market, the available estimates of Zuffa's market share from industry analysts and press reports consistently indicate that Zuffa's market share has been approximately 90 percent by revenue since at least 2008.³⁵²

131. My own analysis of financial data produced for Strikeforce, Bellator and WSOF (the largest non-Zuffa promoters in the Relevant Output Market in recent years) confirms that these promoters represent only a small fraction of the revenues earned in the Relevant Output Market. Table 3 below calculates the combined revenue Bellator, Strikeforce, and WSOF as a proportion of the total revenue earned by these three MMA promoters, plus Zuffa's North American revenue. As seen below, since 2009, Strikeforce, WSOF, and Bellator's combined revenues have never represented more than nine percent of the total revenues earned by all four promoters, and have usually come to five percent or less, even under conservative assumptions.³⁵³ Consistent with these figures, a 2016 article in *Bloody Elbow* (an online periodical covering the

352. James Edwards, *ONE Championship and UFC is the story of East and West in the MMA market*, INDEPENDENT, April 19, 2016 ("UFC has got a 90-percent market share in the [United] [S]tates. We've got a 90-percent market share in Asia..."). See also ZFL-1241786 at 789 (July 2012 presentation by Brazilian Bank BTG Pactual estimating UFC has "more than 90% market share" and Elite XC, HD Net, Dream, Yamma, and StrikeForce account for 10%); ZUF-00401766-779 at 768 (April 2010 presentation by KO Associates asserts UFC: 90% market share by revenue"); ZUF-00421380-97 (August 2009 Strikeforce business plan cites Forbes Magazine for estimate that UFC "account[s] for 85-90% of industry revenues"); Matthew Miller, *Ultimate Cash Machine*, FORBES, April 17, 2008, available at <https://www.forbes.com/forbes/2008/0505/080.html> ("UFC is estimated to control 90% of the mixed martial arts industry."). See also ZUF-00157199 (internal UFC email from Randy Klein to Kirk Hendrick (January 7, 2009), citing market share estimate of 90 percent). See also ZIF-00401766-779 ("Mixed Martial Arts: UFC vs. Strikeforce" by KO Associates (April 28, 2010)) at 798 (showing market share estimate of 90 percent).

353. These figures are conservative because they are limited to Zuffa's event revenue for events in North America, and exclude all non-event-specific sponsorship revenue, which Zuffa does not disaggregate by geographic region. At the same time, the data reflect all revenue recorded for Strikeforce and Bellator, regardless of source.

MMA industry) concluded that “[w]hile competitors [to the UFC] like World Series of Fighting and Bellator do exist, the competition they offer seems very limited. Estimates for the WSOF and Bellator’s combined yearly revenue is roughly 1/20th that of the UFC.”³⁵⁴

TABLE 3: REVENUE AND SHARE ESTIMATES FOR STRIKEFORCE, BELLATOR, WSOF

	[A]	[B]	[C]	[D]	$\frac{[A + B + C]}{[A + B + C + D]}$
Year	Strikeforce (All Revenue)	Bellator (All Revenue)	WSOF (All Revenue)	Zuffa (NA Events*)	Combined Share of SF, BT, WSOF
2009	\$8.9M	--	--	\$236.8M	4%
2010	\$13.1M	\$3.1M	--	\$331.1M	5%
2011	--	\$5.4M	--	\$324.5M	2%
2012	--	\$9.2M	\$0.2M	\$256.4M	4%
2013	--	\$16.2M	\$1.4M	\$336.6M	5%
2014	--	\$21.0M	\$2.2M	\$239.0M	9%
2015	--	\$14.1M	\$2.1M	\$320.5M	5%
2016	--	\$18.3M	\$1.8M	\$498.1M	4%

Notes: *Restricted to Zuffa’s revenue for events in North America; excludes all non-event-specific sponsorship revenue, which Zuffa does not disaggregate by geographic region. In contrast, the data reflect all revenue recorded for Strikeforce, Bellator, and WSOF, regardless of source.

6. Natural Barriers to Entry

132. Natural barriers to entry are those that would-be entrants seeking to compete with Zuffa would face even in the absence of the Challenged Conduct. These include the “[s]ignificant fixed costs” that “are required to create content...”³⁵⁵ These also would include costs associated with “proper infrastructure, substantial content to market upcoming fights, effective television distribution...and adequate resources to satisfy the costs of a UFC-level production.”³⁵⁶ In

354. See John Nash, *Why do boxers make more than MMA fighters?*, BLOODY ELBOW, Aug. 23, 2016.

355. DB-ZUFFA-00006389 at 96.

356. *Id.* at 439 (“With such high barriers to entry, a competitor would need proper infrastructure, substantial content to market upcoming fights, effective television distribution, a deep line-up of marquee fighters and adequate resources to satisfy the costs of a UFC-level production... In order for a competing MMA organization to generate revenues comparable to UFC, the organization must be willing to invest significant capital in order to build the distribution network required to promote and broadcast major events, as well as create or acquire sufficient content to effectively market such events. Substantial capital would also be required for a competing organization to attract the

addition, increasingly widespread regulation in the industry “acts as a barrier to entry for smaller MMA organizations as state-sanctioning rules mandate proper insurance and medical coverage for fighters, which can be prohibitively expensive[.]”³⁵⁷

7. Artificial Barriers to Entry

133. Artificial barriers to entry are those that for would-be entrants seeking to compete with Zuffa incur as a result of the Challenged Conduct As explained in Part III.C.1 below, the Challenged Conduct has denied rivals access to the Fighters necessary to compete effectively with the UFC. Accordingly, the Challenged Conduct is an artificial barrier to entry and expansion.

8. Market Participants and Observers Viewed Zuffa As Dominant

134. Zuffa’s dominant position in the MMA industry is widely recognized by Zuffa and by third parties. A set of prepared Zuffa talking points tout “[u]nrivaled 360 degree ownership in the sports world. . . . No other organization of scale exists with similar ownership structure and control of content, brand, events and production[.]”³⁵⁸ Zuffa considers Bellator (the largest non-Zuffa MMA promoter since Zuffa’s 2011 acquisition of Strikeforce), to be only a “distant”³⁵⁹ competitor, with “fighters that could no longer compete at the UFC level.”³⁶⁰ Joe Silva testified that the UFC did not view Bellator or its Fighters as on the same level as the UFC.³⁶¹ Zuffa also

talent necessary to stage a successful event, while good matchmaking from a deep roster of talented fighters under contract is essential.”).

357. DB-ZUFFA-00006389 at 398 (“The UFC’s efforts to promote the widespread regulation of the MMA sport also acts as a barrier to entry for smaller MMA organizations as state sanctioning rules mandate proper insurance and medical coverage for fighters, which can be prohibitively expensive.”).

358. ZFL-2529699, at 1 (6/28, 2015 talking points for Apollo include: “Unrivaled 360 degree ownership in the sports world. . . . No other organization of scale exists with similar ownership structure and control of content, brand, events and production; with full decision making authority and flexibility.”).

359. In Moody’s 2014 draft credit opinion, describing Bellator as “a competitor of UFC,” UFC CFO John Mulkey inserted “distant”: “a [distant] competitor of UFC.” ZFL-1081154 at 55.

360. RAINE0018791 at 94 (“Fighters from UFC that are on Bellator are fighters that could no longer compete at the UFC level.”).

361. Silva testified that “if you gave [former two-time Bellator Lightweight Champion Eddie] Alvarez the shot and [UFC Lightweight Champion Benson] Henderson slipped on a banana peel and lost you will have given Bellator

regularly dismissed the significance of other MMA promoters generally.³⁶² Similarly, a 2012 Deutsche Bank Report dismissed the competitive significance of other MMA promoters generally and Bellator in particular:

In recent years in MMA, promotions that have tried to position themselves as the UFC's primary competitor, such as Bellator, have always failed. Bellator's most recent event at UC Irvine's Bren Center attracted only 4,000 people...None of the Bellator fighters are household names.³⁶³

135. Other promoters disavow any attempt to compete directly with Zuffa. In an investor prospectus dated September 2, 2016, Alliance MMA (formed through acquisitions of regional promoters) states that “[u]nder the Alliance MMA umbrella, we expect that our regional MMA promotions will identify and cultivate the next generation of UFC and other premier MMA promotion champions....”³⁶⁴ The Alliance prospectus clarifies its status as a “developmental organization” that explicitly avoids even the appearance of direct competition with a “premier national promotion,” (namely, the UFC):

[I]t is our intention to serve as a developmental organization for the UFC and other premier national MMA promotions in the same fashion as college athletic programs serve as “feeders” to professional sports leagues] ... [s]hould the UFC or another premier national MMA promotion view us as a threat they could use their significantly greater resources to frustrate our business and growth strategy and materially and adversely affect our business.³⁶⁵

the greatest Christmas present of all: Bellator's champ would jump from number ten to number one. Even just giving their former champion an immediate title shot puts Bellator on a level they don't deserve.” Silva Dep. at 216:21-217:5; Silva Exh. 16. He further explained that would “benefit Bellator” because “every promotion wants to be able to claim to be number one, to claim that you have the best fighters. That gives some teeth to that claim.” *Id.* at 220:8-12.

362. In an interview with FanHouse in December 2009, Dana White said “Let me ask you a question ... Do you think that there's any guy we can't get that we want? Other than Fedor [Emelianenko]?...But everyone else that we've wanted, we got.” ZFL-2461790 at 90. Feb. 12, 2011 email from Joe Silva to Dana White, subject line, “We Own MMA”, lists the MMA rankings from USA Today/SB Nation Consensus Rankings, which presents the top 25 Fighters in MMA for the seven major weight classes, and lists the ratio of top Fighters in each weight class controlled by Zuffa. ZUF-00085896. ZFL-2559292, 2010, Dana White news article quote noting that “other promotions...are not deep enough. There are not enough good fighters over there for them to challenge. There is here [the UFC], that's what makes it fun and interesting.”

363. DB-ZUFFA-00006389 at 439.

364. http://www.nasdaq.com/markets/ipo/filing.ashx?filingid=11067618#V448288_424B1_HTM_A_003

365. *Id.*

136. Even in the instances in which Fighters lack an explicit Zuffa-out clause, Zuffa has been able to recruit champions or other high-value Fighters from other MMA promotions. In March 2008, upon the request of Zuffa's Assistant General Counsel, Michael Mersch, Felix Martinez, the founder of Cage Fury Fighting Championship ("CFFC") consented to allowing Jim Miller to fight for the UFC and assigning his contract to the UFC even though Miller's contract prohibited him from fighting in any other promotion, unless approved by Martinez.³⁶⁶ In 2014, the World Series of Fighting ("WSOF"), an MMA promotion, released Ashlee Evans-Smith from her contract to compete in the UFC.³⁶⁷ In 2017, David Branch voluntarily relinquished both his light heavyweight and middleweight titles with WSOF, which granted his release to compete in the UFC,³⁶⁸ and WSOF Lightweight champion Justin Gaethje moved to the UFC despite claims by the President of WSOF that "Justin isn't a free agent."³⁶⁹ Of course, Zuffa has also gained access to the rosters of would-be rivals such as Strikeforce, Pride, WEC, and others simply by acquiring the promotions outright. Finally, to the extent that Fighters have switched from the UFC to another MMA promoter, they invariably have done so because of some change in status that made them significantly less competitive and thus no longer competitive at the UFC level—for example, a series of losses or injury—and not because other promoters provide viable competitive alternatives

366. See ZFL-2188190 ("I do not give Jim Miller permission to fight in the International Fight League (IFL), but I do consent in letting him fight for the Ultimate Fighting Championships (UFC).").

367. Sean Shelby texted Dana White on November 13, 2014 at 2:08:32 pm indicating that "Wsof [World Series of Fighting] is letting "Ashlee Evans-Smith] move over to ufc." ZFL-2699683. See also ZFL-2699687 (On May 13, 2015 at 18:27 pm, WSOF executive Ali Abdel-Aziz texts Dana White "Jessica Aguilar is the number 1 straw weight in the world. I want to release her to you guys." On May 16, 2015 at 22:57 pm, Abdel-Aziz wrote to White "We're gonna release Jessica only to you guys and we don't want any money...").

368. *Two-division WSOF champ David Branch relinquishes titles, heads to free agency*, MMA JUNKIE, Feb. 6, 2017; see also Steve Juon, *Former WSOF dual-weight champion David Branch re-signs with UFC*, MMA MANIA, Feb. 15, 2017.

369. Steve Juon, *Justin Gaethje tests free agency, but WSOF still holds matching rights*, MMA MANIA, Mar. 30, 2017; see also John Morgan, *Justin Gaethje on new UFC deal: "Now I get a chance to prove I'm the best in the world."* MMA JUNKIE, May 5, 2017; Mersch V.I Tr. 93:1-6 (stating that Justin Gaethje, who was a World Series of Fighting Champion in his weight class, left the World Series of Fighting for the UFC).

for UFC Fighters.³⁷⁰ (As explained in Part II.C above, the Challenged Conduct makes it extremely difficult, if not practically impossible, for Fighters that Zuffa wishes to retain to defect to another MMA promotion).

137. In its pre-acquisition analysis, WME-IMG analyzed nine distinct “Key Diligence Focuses,”³⁷¹ such as “Fighter compensation inflation risk,”³⁷² and “Leverage levels in the near term.”³⁷³ Not included among the nine Diligence Focuses is any competitive risk posed by potential rivals to Zuffa. Instead, the analysis notes that the Zuffa acquisition is a “Rare Ownership Opportunity in Sports,”³⁷⁴ given that the “Vast majority of sports leagues are not ‘buyable.’”³⁷⁵ Put differently, Zuffa’s current owners view the UFC as a sports league unto itself (like the NBA or the NFL), as illustrated in Figure 2.

370. Fighters that can no longer compete in (or are simply “cut” from) the UFC often end up in other “minor league” promotions. For example, Jeff Aronson of Titan FC explained that “No one is going to take on Zuffa and win at this point. It’s just not going to happen, and I have no aspirations to do that. I am very happy to do that carving my place and my niche giving young fighters the best platform in the world to shine on, and giving vets the opportunity to come and shine.” *See also* Aronson Dep. at 31:10-32:4; ZFL-1112933 at 33 (“Bellator has old ex UFC fighters that are way past their prime.”); Ethan Finkelstein, *WSOF New PPV Model to Award 50 Percent to Fighters*, FANSIDED, Sept. 23, 2014 (“Considering that World Series of Fighting’s biggest names are currently former UFC contenders (notice how I did not say champions), the situation looks bleak for now.”).

371. WME-ZUFFA-00001150 at *7.

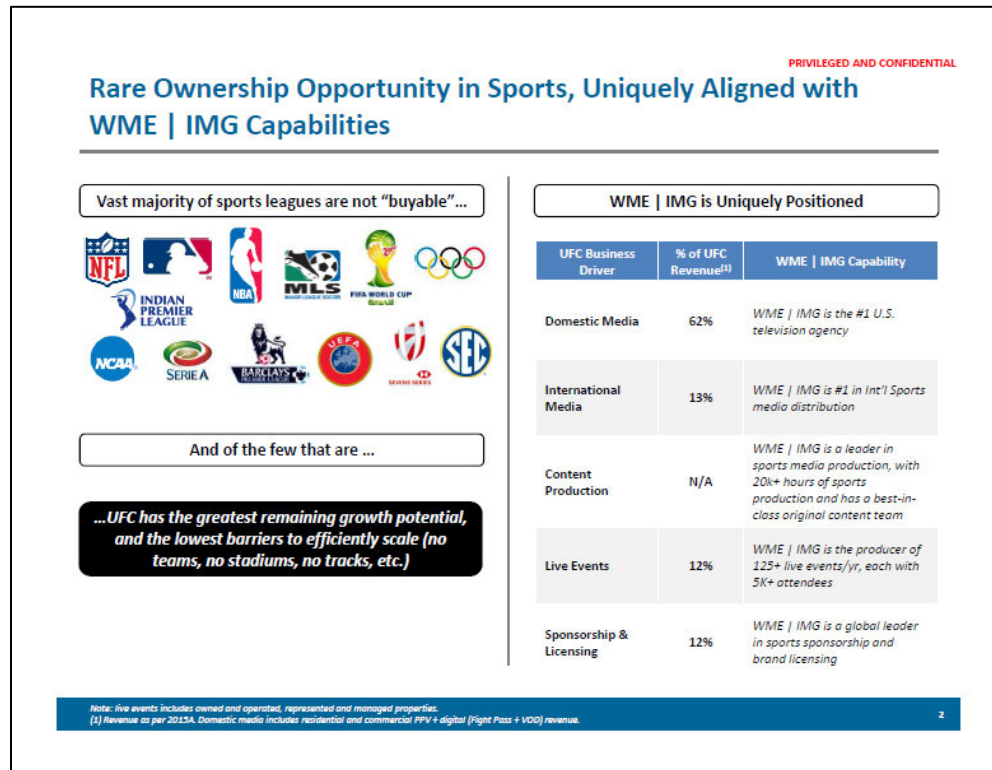
372. *Id.*

373. *Id.*

374. *Id.*

375. *Id.*

FIGURE 2: SLIDE FROM WME-IMG PRESENTATION



Source: WME-ZUFFA-00001150 at *7 (presentation prepared by WME-IMG in June 2016, just prior to WME-IMG's acquisition of Zuffa in August 2016).

In a June 2010 interview with *MMA Junkie*, Dana White remarks:

There was a time when it was neck-and-neck. That time is over. There were times when we were in dogfights, but everybody needs to just concede and realize we're the [expletive] NFL. Period. End of story.³⁷⁶

In a May 2010 email string, Edward Muncey puts together bullet points “that reinforce[] why *Yahoo! Sports* recognizes the UFC brand as the eminent entity in the sport of MMA.” The first major point read:

Like the other major sports properties (e.g. NFL, MLB, NBA, NHL) in their respective categories, the UFC has no close 2nd place. As the NFL is the defining brand of Football, UFC is the defining brand of mixed martial arts.³⁷⁷

376. John Morgan, *Dana White stands by 'pay for rankings' claim, says UFC is the NFL of MMA*, MMA JUNKIE, June 14, 2010, available at <http://mmajunkie.com/2010/06/dana-white-stands-by-pay-for-rankings-claim-says-ufc-is-the-nfl-of-mixed-martial-arts>.

377. See ZUF-00395941.

138. In an interview with ESPN's "Outside the Lines" released by Zuffa on January 16, 2012, Lorenzo Fertitta stated "[t]here never has been a comparable outlet [to the UFC]. There never has been. When has there ever been a comparable outlet? We've dominated this, this sport, alright? We've dominated the space[.]"³⁷⁸ Similarly, in March 2014, at The Leaders Sport Summit in London, England, Lorenzo Fertitta stated that

[A]t the end of the day, we really have kind of become the gold standard in a sense. When you look at the top 10 in every division, we've got every fighter under our umbrella. All the fighters want to be with us because they want to fight the best competition. So from that standpoint, I think there is really—the competition isn't really relevant in that sense[.]³⁷⁹

Third-party evaluators have also emphasized Zuffa's market dominance, and the profitability that comes with it. A 2009 Deutsche Bank report notes that "UFC holds the dominant market position within the sport and continues to do so even as a highly fragmented group of competitors have entered the market in an attempt to emulate UFC's success."³⁸⁰ A 2012 Deutsche Bank report states that the 2007 PRIDE acquisition "solidified UFC's #1 position in the MMA market,"³⁸¹

378. Zuffa's Response to Plaintiffs' Request for Admission No. 17.

379. Zuffa's Response to Plaintiffs' Request for Admission No. 32.

380. ZUF-000162329-382 (October 2009 Deutsche Bank Report, "\$100,000,000 Incremental Term Loan": 356 ("...the UFC holds the dominant market position within the sport and continues to do so even as a highly fragmented group of competitors have entered the market in an attempt to emulate UFC's success").

381. A 2012 Deutsche Bank Credit Finance Report notes, "The UFC acquired PRIDE Fighting Championships in mid 2007, which was its number one competitor and formerly the second largest MMA association in the world, having a very strong presence in Japan. This acquisition solidified UFC's #1 position in the MMA market[.] The Company subsequently acquired World Extreme Cagefighting in October 2006, which it merged with the UFC in October 2010, and also purchased Strikeforce in March 2011[.] These acquisitions have further cemented the Company's dominant position in MMA, and along with the UFC's powerful brand name and full ownership[.]" DB-ZUFFA-00006389 at 98. The same report notes that "MMA in the United States is dominated by UFC. While there is no indication UFC's dominance will wane anytime soon, there are some who follow the industry that suggest that there may be some risks. The primary risk being the possibility of UFC fighters defecting to other promotion companies over pay disputes. The possibility of this occurring is remote as UFC has no match in the industry relative to overall management capabilities, promotion and public relations savvy. Furthermore, with the merger between sister promotion World Elite Cagefighting ("WEC") and UFC, as well as the acquisition of Strikeforce, the Company has virtually no competition left. Therefore it is strongly believed that UFC will maintain its domineering position for the foreseeable future." *Id.* at 6403. "Furthermore, with the acquisition of PRIDE Fighting Championships and its absorption into UFC, the acquisition of World Elite Cagefighting and its subsequent merger with UFC, as well as the purchase of rival promotion Strikeforce, the Company has established itself as the outright leader in the MMA market." *Id.* at 6439.

while subsequent acquisitions “further cemented the Company’s dominant position in MMA, and along with the UFC’s powerful brand name[.]”³⁸² A 2010 announcement by Moody’s upgrading Zuffa’s rating outlook emphasized

Zuffa’s continued strong revenue and EBITDA growth trends worldwide...the increasing mainstream acceptance of the sport of mixed martial arts’ (MMA) popularity and particularly so for industry leading UFC...[Zuffa’s] premium MMA platform and UFC brand, sturdy credit metrics, strong free cash flow and superlative international revenue growth prospects.³⁸³

Such optimism implicitly discounts the prospect of some potential rival MMA promoter on the horizon.

139. A 2012 Deutsche Bank Credit Finance Report notes that “with the merger between sister promotion World Elite Cagefighting (“WEC”) and UFC, as well as the acquisition of Strikeforce, the Company has virtually no competition left... it is strongly believed that UFC will maintain its domineering position for the foreseeable future.”³⁸⁴ The report goes on to describe various “competing upstarts,”³⁸⁵ which “have attempted to replicate the success of UFC and failed.”³⁸⁶

382. DB-ZUFFA-00006389 at 98.

383. Moody’s Investors Service, “Announcement: Moody’s Changed Zuffa LLC’s (d/b/a Ultimate Fighting Championship or UFC) Rating Outlook to Positive from Stable,” (December 1, 2010), *available at* https://www.moodys.com/research/Moodys-Changed-Zuffa-LLCs-dba-Ultimate-Fighting-Championship-or-UFC--PR_210184.

384. ZUFFA-00006389 at 6403; *see also* DB-ZUFFA-00054280 (July 2011 Internal Deutsche Bank email in which an analyst working on the Zuffa account wrote that a Washington Times article concerning the collapse of an MMA promotion “Strengthens our point about there being zero competition [to the UFC].” (citing <http://www.washingtontimes.com/news/2008/jun/17/ufc-beating-down-rivals/>)).

385. *Id.* at 6439.

386. *Id.* *See also* ZFL-1544038 at 84 (December 2012 Information Memorandum prepared by The Raine Group and Itau BBA to market an equity investment in Zuffa Brazil, stating that UFC has a “Unique and Difficult to Replicate Business Model...no competitors on a domestic or global basis.”). As late as March 2016, the Raine Group was still representing to potential investors that “1) Given its long history and financial success, the UFC is able to attract top talent by offering the highest compensation to its athletes. Other smaller leagues are not able to compete given the UFC’s size and scale. 2) UFC is the clear leader in combat sports and a globally-recognized brand. Other MMA leagues are smaller and do not have the same premium brand.” *See* RAINE0020542 (Item 2.3 at line 91).

140. In summary, the combination of dominant market shares and barriers to entry allows me to conclude that Zuffa has significant monopoly power in the Relevant Output Market and monopsony power in the Relevant Input Market and Submarket.

9. All Indirect Evidence and Analysis of Zuffa's Market Power Is Common to the Classes

141. All of the indirect evidence of Zuffa's market power, and my analysis of it, is common to the Classes as a whole. If I were asked to analyze indirect evidence of market power for any single member of either Class, the evidence and analysis would be the same.

B. Direct Evidence of Zuffa's Market Power

142. The direct evidence reviewed here demonstrates that Zuffa has monopoly power over Live MMA Events and monopsony power with respect to its Fighters. Direct evidence of monopsony power includes evidence of Zuffa's ability to profitably suppress Fighter compensation, and to restrict the supply of Fighter services. Direct evidence of Zuffa's monopoly power includes evidence of Zuffa's ability to profitably exercise its pricing power over Live MMA Events, and to restrict the supply of Live MMA Events. Finally, there is direct evidence of Zuffa's ability to exclude or impair rivals or potential rivals.

1. Direct Evidence of Power to Suppress Fighter Compensation Below Competitive Levels

143. The ability to suppress compensation below competitive levels constitutes direct evidence of Zuffa's substantial market power, and in particular, monopsony power. In Part III.D below, I use regression analysis to show that there is a negative relationship between Fighter compensation (measured as a share of event revenues) and the extent to which Zuffa's long-term exclusive contracts foreclosed its Fighters from rivals (a measure of Zuffa's market power). This analysis shows that, as the share of Fighters (key inputs to an MMA promotion) foreclosed by Zuffa increases, Zuffa is able to pay its Fighters a lower share of its event revenues. The result is

highly significant in both a statistical and an economic sense, and the result holds after controlling for a wide range of factors that may also influence Fighter compensation. Nothing in the record indicates that Zuffa suffered significant Fighter defections as a result of reducing the share of revenue paid to Fighters, suggesting that its exercise of monopsony power was profitable.

144. Additional direct evidence of suppressed Fighter compensation includes: (1) evidence that Zuffa has reduced the share of revenue paid to Fighters over time; (2) evidence that Zuffa pays a significantly lower share of its revenues than Strikeforce (before the acquisition) or Bellator; and (3) a natural experiment in which Zuffa unilaterally restricted Fighter compensation by imposing a new sponsorship tax.³⁸⁷ Again, nothing in the record indicates that Zuffa suffered significant Fighter defections, suggesting that these exercises of monopsony power were profitable.

2. Direct Evidence of Power to Restrict the Supply of Fighter Services.

145. The ability to restrict the supply of Fighter services below competitive levels constitutes additional direct evidence of monopsony power. Zuffa restricted the supply of Fighter services by consistently maintaining significantly more Fighters under contract than it could use, creating forced periods of inactivity during which Fighters were not paid and were not available to other MMA promoters to fight. In addition, Zuffa pursued a strategy of restricting the number of career paths available to Fighters.³⁸⁸

146. If Zuffa lacked monopsony power, the excess Fighters on Zuffa's roster could have earned income from other promoters, rather than being bound to Zuffa during periods of forced inactivity (during which they did not get paid). Similarly, in the absence of monopsony power,

387. See Part III.D.3, *infra*.

388. See Part III.D.4, *infra*.

Zuffa could not have restricted Fighter career paths, because Fighters would have defected to other MMA promoters.

3. Direct Evidence of Power Over Pricing of Live MMA Events

147. The ability to raise the price of Live MMA Events above competitive levels, without suffering a sufficiently large defection in viewers to render the price increase unprofitable, constitutes direct evidence of Zuffa's monopoly power. Zuffa has implemented substantial price increases over time, including a 24 percent PPV price hike from 2010 to 2015, the time period when Zuffa's foreclosure of the Relevant Input Market and Submarket increased significantly, and during which Zuffa acquired Strikeforce. The profitability of this price hike is evident from the inelastic demand response to the price hike. More generally, the profitability of Zuffa's price increases is evident from the fact that they were not reversed. Zuffa could not have profitably imposed these price increases without monopoly power.³⁸⁹

4. Direct Evidence of Power to Restrict the Supply of Live MMA Events

148. The ability to restrict the supply of Live MMA Events constitutes direct evidence of monopoly power. Evidence that Zuffa was able to do so includes Zuffa's imposition of a significant and profitable restriction in PPV output between 2010 and 2015, during which Zuffa's foreclosure of the Relevant Input Market and Submarket increased significantly, and Zuffa acquired Strikeforce.³⁹⁰ Given that Zuffa was essentially the only MMA promoter offering PPV events over this timeframe,³⁹¹ the industry supply of PPV events was also restricted. Zuffa's could not have profitably restricted the output of PPV events in the absence of monopoly power. Zuffa

389. See Part III.D.5, *infra*.

390. See Figure 1, *supra*; Parts III.D.5-6, *infra*.

391. Bellator put on a single PPV event in 2014. See <https://www.bloodyelbow.com/2017/6/25/15870964/spike-executive-bellator-nyc-the-first-of-many-ppv-events-running-mma-news> (stating that Bellator's debut PPV event was in 2014; Bellator hosted its second-ever PPV event in June 2017). In contrast, Zuffa put on 12 PPV events in 2014.

has also restricted the industry supply of Live MMA Events generally, by restricting the output of other MMA promoters.³⁹² Zuffa's could not have restricted the supply of Live MMA Events in the absence of substantial market power.

4. Direct Evidence of Power to Exclude Rivals

149. Access to a broad stable of high-quality MMA Fighters is essential to stage successful MMA events in the Relevant Output Market. The Challenged Conduct blocked Zuffa's would-be rivals from access to this critical input, and also impaired rivals in other ways. In this way, the Challenged Conduct guaranteed that would-be rivals would not pose a significant competitive threat to Zuffa.³⁹³ Some of these would-be rivals have been acquired by Zuffa, others have gone out of business, and others have been relegated to feeder leagues.³⁹⁴ Both Zuffa and third parties recognize that the Challenged Conduct has been so successful in excluding rivals that Zuffa has no close competitors remaining in the market today.³⁹⁵ The revenues and market shares of other MMA promoters are trivial in comparison to those of Zuffa.³⁹⁶

150. In summary, the direct evidence reviewed above allows me to conclude that Zuffa possesses and has exercised monopoly and monopsony power.

5. All Direct Evidence and Analysis of Zuffa's Market Power Is Common to the Classes

151. All of the direct evidence of Zuffa's market power, and my analysis of it, is common to the Classes as a whole. If I were asked to analyze direct evidence of market power for any single member of either Class, the evidence and analysis would be the same.

392. See Part III.D.6, *infra*.

393. See Part III.C.1, *infra*.

394. See Parts II.A.1; III.A.1; III.A.8, *supra*.

395. See Parts III.A.1; III.A.4-5; III.A.8, *supra*.

396. See Parts III.A.4-5, *supra*.

C. The Challenged Conduct Substantially Foreclosed Competition

152. Given that Zuffa has substantial market power, the next question to consider is whether the Challenged Conduct allowed Zuffa to exercise its market power to significantly foreclose competition. I analyze four factors that inform this question. *First*, the conduct at issue must totally or partially prevent competitors from accessing critical inputs, thereby preventing rivals from competing effectively.³⁹⁷ As explained below, in order to stage successful Live MMA Events in the Relevant Output Market, access to a broad stable of high-quality MMA Fighters is essential. But the Challenged Conduct ensured that Zuffa's would-be rivals lacked access to this critical input, and also impaired rivals in other ways. Thus, the Challenged Conduct guaranteed that would-be rivals would not pose a significant competitive threat to Zuffa (as Zuffa and third parties consistently recognized in internal documents and analyses).

153. *Second*, if the resulting foreclosure represents a substantial share of the relevant markets at issue, that would be a further indication that such foreclosure would have adverse competitive effects. As explained below, the shares of the Relevant Input Market and the Relevant Input Submarket foreclosed by the Challenged Conduct are well in excess of the 20-30 percent thresholds that antitrust scholars have found are sufficient "to infer anticompetitive effects."³⁹⁸

154. *Third*, I understand that some courts have considered whether the duration of the contracts at issue is sufficient to "prevent meaningful competition by rivals."³⁹⁹ That is so here, given Zuffa's ability to make its exclusionary terms in most of its Fighter contracts effectively perpetual, given the ratio of the duration of the agreements to the average Fighter's MMA career,

397. See, e.g., Salop, *supra*, at 376; see also Elhauge at 321-322.

398. See HERBERT HOVENKAMP, XI ANTITRUST LAW ¶1821, at 152, 160, 164-65 (1998). See also Einer Elhauge, *Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory*, 123 HARV. L. REV. 469 (2009) ("it makes sense (when effects are not directly proven) to require the same 20-30% foreclosure share threshold that is required to infer anticompetitive effects from exclusive dealing").

399. *ZF Meritor, LLC v. Eaton Corp.*, 696 F.3d 254, 277 (3d Cir. 2012) [hereafter "*ZF Meritor v. Eaton*"].

and given that Zuffa's contract expirations were staggered, further ensuring that other MMA promoters could never have access to a critical mass of top-level Fighters at any given time sufficient to compete effectively with Zuffa.

155. *Fourth*, I understand that courts may also consider evidence that the dominant firm engaged in coercive behavior, and (relatedly) evidence on the ability of customers to terminate the contracts.⁴⁰⁰ These conditions are also satisfied, given (1) Zuffa's ability to exploit provisions in Fighter contracts to retain virtually any Fighter it desired; and (2) the fact that Zuffa's Fighter contracts contain one-way ratchets, giving Zuffa unilateral authority to bind Fighters to exclusive terms or to cut them.

1. The Challenged Conduct Blocked Rivals from Access to Key Inputs Necessary for a Successful MMA Promotion

156. As explained in Parts I.A and III.A.1, MMA promoters rely on Headliners at the Top of the Card to draw audiences and viewers to Live MMA Events. Of course, access to a single Headliner would be insufficient for even a single bout; MMA promoters need access to competitive pairings of Fighters. (In economic terms, Fighters are perfect complements in the MMA bout production function.) Nor would access to a single pair of Headliners be sufficient: To produce a stream of successful Live MMA Events over time, multiple pairings of Headliners are obviously necessary. Further, not all Headliners can be matched against each other. For example, a heavyweight Fighter cannot be matched against a lightweight.⁴⁰¹ Even two Headliners of the same

400. *Id.*

401. *See* Unified Rules and Other Important Regulations of Mixed Martial Arts at § 2, available at <http://www.ufc.com/discover/sport/rules-and-regulations#2> ("In non-championship fights, there shall be allowed a 1 pound weigh allowance. In championship fights, the participants must weigh no more than that permitted for the relevant weight division."); Deposition of Joseph Silva at 130:18-25 ("I have to convince athletic commissions that this guy is reasonable. Especially at the heavyweight division, I have less guys, so ... for him to come in, I have less of a choice who to match him up against..."). *See, also* Hendrick 30(b)(6) V.I Tr. at 217:17-218:10 (stating that Zuffa could not offer a strawweight a heavyweight fight because it is "not offering a legitimate fight").

weight class may be a poor match if there is too much disparity in their relative rankings, or if they have fought each other too recently.⁴⁰² As one review of the existing literature observes,

Superstars in the UFC don't always draw high numbers; they need a competitive opponent in order to garner the desired high buy rates. Anderson Silva, one of the UFC's more popular champions, drew only 300,000 buys in a squash match against Patrick Cote, but drew 725,000 buys facing a much more threatening Vitor Belfort.⁴⁰³

157. Moreover, because Fighters become Headliners by defeating other Headliners, access to a stable of Headliners allows a promotion to create new Headliners. More generally, the list of Headliners is fluid over time, with Fighters' relative rankings shifting constantly with the outcome of bouts, Fighter inactivity, injuries, retirement, and so on.⁴⁰⁴ Therefore, access to a sufficiently broad pool of top-level Fighters (who have the potential to become Headliners) is also important to create and sustain a profitable MMA promotion capable of competing with the UFC.

158. Given (1) the need for a steady supply of appropriately matched Headliners to occupy the Top of the Card; (2) the inherent uncertainty in predicting which Fighters would be capable of doing so (and available to do so) at any given point in the future, and of which Fighters are likely to become Headliners in the future; and (3) the need to replace Fighters that become unavailable due to injury, retirement, and so on, it is clear that ongoing access to a deep pool of talented Fighters is a critical input to the ongoing success of an MMA promotion. As a 2012 Deutsche Bank Report confirms:

402. See, e.g., Silva Dep. 95:18-24 ("Q. [H]ow would you describe or define the term 'contender'? A. That if you have rankings as we have for some while now, it's whoever the higher ranked fighters are who have not recently fought the person who is already champion, would be the highest available contenders."); *id.* at 94:25-95:13 ("Q. Now, is it fair to say that if you have a top-ranked fighter on your roster, you want to try to have that top-ranked fighter fight someone who is at least close to that fighter in rank? A. Yes, ideally. Q. And one of the reasons for that is to create a competitive match-up; is that right? A. Yes. Also to help create more consensus contenders. When people go, well, who should fight for the title next, well, if you go, these two high-ranked guys fought each other, and this was the victor, it would make sense for him to... get a title shot soon.").

403. McGowan & Mahon, *supra*, at 1036.

404. For example, the FightMatrix and USA Today/MMA Junkie rankings are generally updated weekly or biweekly. See <http://mmajunkie.com/category/mma-rankings> (generally showing biweekly updates); see also <http://www.fightmatrix.com/faq/> ("We usually update every Sunday or Monday.").

In order for a competing MMA organization to generate revenues comparable to UFC, the organization must be willing to invest significant capital in order to build the distribution network required to promote and broadcast major events, as well as create or acquire sufficient content to effectively market such events. Substantial capital would also be required for a competing organization to attract the talent necessary to stage a successful event, while *good matchmaking from a deep roster of talented fighters under contract is essential.....* Any organization intent on building a promotion to directly rival UFC would likely be immediately challenged to build and maintain the infrastructure of employees and fighters on a profitable basis.⁴⁰⁵

159. As explained in Part II.C above, when Zuffa wanted to retain Fighters, Zuffa exploited provisions in its agreements with Fighters to make them effectively perpetual. This ensured that Zuffa's would-be rivals lacked access to this critical input, preventing them from competing effectively. Zuffa's staggered, long-term, and exclusive contracts with Fighters therefore constitute both a key artificial barrier to entry and a key component of the Challenged Conduct. Both Zuffa and third parties recognize that the Challenged Conduct had this effect. According to a March 2016 WME-IMG memorandum, the Challenged Conduct generates "practical barriers to entry" by ensuring that the "best fighters" are unavailable to would-be rivals.⁴⁰⁶ The document recognizes explicitly that, without access to this critical input, rivals cannot generate sufficient revenue to compete effectively:

405. DB-ZUFFA-00006389 at 439 (emphasis added). *See also* John Nash, "Why do boxers make more than MMA fighters?" *Bloody Elbow* (Aug. 23, 2016) ("[I]t is very hard to underestimate how much the UFC dominates the market of mixed martial arts...Somewhat understandable when one realizes that, according to the Fight Matrix rankings, every male fighter in the top three of their division and roughly 85% of all top 10 fighters in the ten divisions that the UFC promotes are under contract with the UFC."). Nash stated on Twitter in 2017 that "[m]y guess is that you'd need around 30% [of top Fighters] and a few #1s before you could threaten a serious run at the UFC." *See* <https://twitter.com/heynottheface/status/884511218207084544>; *see also* Silva Dep. 103:4-23 ("Q. And if you have a live MMA Event that doesn't have a top level, headlining match-up, that could hurt the ability of the event to attract an audience; is that fair? A. It is. ... You may want a bigger fight for a card, but if people are injured or get married or whatever -- you have to work with what you have. Q. And you'd like to have -- as a matchmaker, you'd like to have . . . a complete stable of top-level fighters that are available to fight so you can create headlining events; correct? A. That would be ideal. Q. Okay. And you would not headline an MMA event at the UFC with two lesser-known or lower-ranked fighters if you could help it; correct? A. If you could help it.").

406. WME-ZUFFA-00013978.

While technical barriers to entry to host a fight are relatively low, practical barriers to entry are extremely high. UFC controls the best fighters, on staggered contracts, and has the revenue model providing ability to pay fighters the most in the market, by far.⁴⁰⁷

Similarly, a 2009 Deutsche Bank Report also described the Challenged Conduct as a key “barrier to entry,” emphasizing that Zuffa had the “[v]ast majority of top fighters under multi-fight exclusive contracts.”⁴⁰⁸ A 2014 Moody’s Credit Opinion cites Zuffa’s ability to maintain a “large contractually bound pool of fighters”⁴⁰⁹ as a key “barrier to entry,” and goes on to note that “we believe that Zuffa has attracted and secured under exclusive contract most of the top highly trained fighters in the sport, which is a qualitative competitive advantage.”⁴¹⁰

160. Text drafted by Zuffa for Deutsche Bank’s 2013 debt-offering prospectus states that “All [UFC] athletes are under long term, exclusive contracts which provides a major competitive advantage for the UFC.”⁴¹¹ A 2010 announcement by Moody’s upgrading Zuffa’s rating outlook explicitly cited the “breadth of fighters under multi-year contracts which help serve as an effective barrier to entry,”⁴¹² emphasizing Zuffa’s “large contractually bound pool of fighters with superior opportunities for exposure and profit....”⁴¹³

407. *Id.*

408. ZUF-000162329-382 (October 2009 Deutsche Bank Report, “\$100,000,000 Incremental Term Loan”); *id.* at 347 (“Key investment considerations” “High barriers to entry,” including “Vast majority of top fighters under multi-fight exclusive contracts”).

409. ZFL-1081154 at 54. Moody’s draft 2014 Credit Opinion for Zuffa notes that its rating “reflects [Zuffa]’s unparalleled position as the largest MMA promotion company. This strong competitive position is protected by high barriers to entry, which include Zuffa’s first mover advantage in structuring and organizing the sport, growing fan interest and loyalty with respect to UFC, brand strength in MMA, and its large contractually bound pool of fighters with superior opportunities for exposure and profit.” Moody’s further notes that “we believe that Zuffa has attracted and secured under exclusive contract most of the top highly trained fighters in the sport, which is a qualitative competitive advantage.” *Id.* at 55.

410. *Id.* at 55.

411. ZFL-1055607 at 613.

412. Moody’s Investors Service, “Announcement: Moody’s Changed Zuffa LLC’s (d/b/a Ultimate Fighting Championship or UFC) Rating Outlook to Positive from Stable,” (December 1, 2010), [available at https://www.moodys.com/research/Moodys-Changed-Zuffa-LLCs-dba-Ultimate-Fighting-Championship-or-UFC--PR_210184](https://www.moodys.com/research/Moodys-Changed-Zuffa-LLCs-dba-Ultimate-Fighting-Championship-or-UFC--PR_210184) (“Moody’s Investors Service changed Zuffa, LLC’s (Ba3 Corporate Family Rating) rating outlook to positive from stable. ‘The rating outlook change is prompted by Zuffa’s continued strong revenue and EBITDA growth trends worldwide,’ stated Neil Begley, a Senior Vice President at Moody’s Investors Service. It is also based

161. As a 2013 Deutsche Bank Report concludes, the Challenged Conduct functioned to “retain talent within the Company,”⁴¹⁴ and “prevent[] fighters from moving to different MMA organizations.”⁴¹⁵ As a result, Zuffa has “no major competitors on a domestic or global basis.”⁴¹⁶

UFC athlete contracts are designed to retain talent within the Company. Most contracts are 4 fights or 20 months, whichever comes first, although marquee fighters typically have longer-term contracts, with an exclusivity clause, that prevents fighters from moving to different MMA organizations while under contract, and with negotiation and matching rights after the agreement expires.... Furthermore, UFC typically has the right to retain athletes who hold a championship title in any weight class at the expiration of their contract for one additional year, thereby ensuring that the Company continues to benefit from such a fighter’s potential popularity through additional promotions and events. UFC’s complete control and ownership of its content also discourages competing organizations from soliciting UFC fighters by restricting their ability to market prior fights for promotional purposes. *It is difficult to replicate the distribution model and there are currently no major competitors on a domestic or global basis.*⁴¹⁷

Deutsche Bank’s conclusion that, as a result of the Challenged Conduct, Zuffa has “no major competitors”⁴¹⁸ is consistently echoed by other industry participants as well as Zuffa itself (as explained in Part III.A.8 above). It is also consistent with the fact that the revenues and market shares of other MMA promoters are trivial in comparison to Zuffa’s (as explained in Parts III.A.4-5 above). Zuffa’s artificially created barriers to entry through the Challenged Conduct explain, at least in part, why well-capitalized enterprises (such as Mark Cuban’s HD Net)⁴¹⁹ and media

upon improving credit metrics, and the increasing mainstream acceptance of the sport of mixed martial arts' (MMA) popularity and particularly so for industry leading UFC, in Moody’s view. Zuffa’s Ba3 CFR, Probability of Default Rating (PDR) and bank facility rating remain unchanged. Zuffa’s Ba3 CFR reflects its premium MMA platform and UFC brand, sturdy credit metrics, strong free cash flow and superlative international revenue growth prospects. The rating considers the benefits from the growing popularity of UFC, and its scale, brand strength and breadth of fighters under multi-year contracts which help serve as an effective barrier to entry. The rating is also impacted by Zuffa’s relative large scale in MMA, its first mover advantage of bringing structure to the sport, its large contractually bound pool of fighters with superior opportunities for exposure and profit....”).

413. *Id.*

414. DB-ZUFFA-00057908, at 912.

415. *Id.*

416. *Id.*

417. *Id.* (emphasis added).

418. *Id.*

419. Josh Gross, Cuban sees bright future for MMA, ESPN, (September 13, 2007), *available at* <http://www.espn.com/extra/mma/news/story?id=3017701>.

conglomerates (such as Viacom, which purchased Bellator)⁴²⁰ have failed to pose a successful challenge Zuffa's dominance.

162. Zuffa recognized the effect of the Challenged Conduct on its rivals, and deliberately utilized its exclusive contracts with Fighters to prevent other MMA promoters from gaining “traction,”⁴²¹ by keeping Fighters “locked up”⁴²² or “tied up”⁴²³ and hence unavailable to other MMA promoters. Zuffa enforced its exclusivity provisions to prevent Fighters from fighting for other MMA promoters.⁴²⁴ An internal strategy presentation recognizes Zuffa's need to ensure that other MMA promoters are not successful, thereby ensuring that Zuffa is “the only viable

420. Viacom buys Bellator, plans 2013 start on Spike, USA TODAY, (October 26, 2011), *available at* <https://usatoday30.usatoday.com/sports/mma/post/2011-10-26/viacom-buys-bellator-plans-2013-start-on-spike/558003/1>

421. *See* ZFL-1872579. In a February 2014 text message discussion between White and Lorenzo Fertitta regarding re-signing Gilbert Melendez, Melendez's contract with Zuffa was ending and he had come to an agreement with Bellator. In response, Zuffa exercised the right to match clause to re-sign Melendez. *See* ZFL-1897652. Fertitta texts White: “We gotta keep taking these fuckers oxygen till they tap out. We have sacrificed too much to let anyone get traction now[.]” At his deposition, Lorenzo Fertitta testified that the term “fuckers” referred to Bellator, while the “oxygen” referred to Fighters Gilbert Melendez and Eddie Alvarez, both of which Bellator was attempting to recruit. *See* Fertitta Tr. at 291-92.

422. *See* ZFL-2497585 (UFC Chief Paralegal Tracy Long writes “Lorenzo has asked me to prepare a list of all Strikeforce fighters with comp and fights left” and prepares a list of UFC Fighters with past connections to SF. Joe Silva responds, “Not 100% sure why Lorenzo wants this list but my guess is he wants to make sure that fighters with past Strikeforce ties are locked up incase Coker tries to recruit them now that he is at Bellator.”).

423. *See* ZFL-2536695 (Long to Silva: “Lorenzo wants Hector [Lombard] tied up in case he looks good at UFC 166.”).

424. When Mark Bocek retired and requested that Zuffa release him from his contract in August 2014, Joe Silva wrote in a text message: “Bocek was sent a retirement letter but now he is asking for a complete release. He's coming off a win so I would not give it to him. He could end up fighting for Bellaforce[sic].” *See* ZFL-1897652 at 796. Bocek then asks Lorenzo Fertitta, “Im [sic] retired and have nothing to gain by being under UFC contract for life. Please release me permanently.” *Id.* at 683. Lorenzo replies, “That's not really how it works Mark. Every fighter from Chuck Liddell, Mark Coleman, etc that retired in the middle of their contract are still under contract. You can do anything to make money you just can't fight anywhere else.” *Id.* at 685. *See also* ZFL-1421024 – White letter to Rampage Jackson: “It appears that you have decided to ‘retire’ from MMA or other professional fighting competition. Assuming that is your intention, Zuffa, LLC is electing to suspend the Term of the Agreement for the period of such retirement. If you decide to come out of retirement again, I'll be ready to promote the remaining fights pursuant to your Agreement.” *See also* ZFL-1702162 (In March 2008, Zelaznik sent a demand letter to Combat Fighting noting that “[i]t has come to our attention that you have listed Melvin Guillard, a fighter currently under contract with the [UFC], as a fighter participating in your fight Combat Fighting Championship event scheduled for May 17, 2008 in Newcastle, England,” and demanding that they “explicitly state that Mr. Guillard will not be fighting” in the event). *See also* ZFL-2602496 (In February 2010, Fighter Akiyama asked for permission to compete in a Japanese MMA event called ASTRA in a judo match. Joe Silva responds, “He cannot do it.”). *See also* ZFL-2615437; ZFL-12447128; ZFL-2135552; ZFL-2520643.

alternative [for] a top tier fighter[’s] career.”⁴²⁵ According to a 2010 email from the owner of Strikeforce, summarizing a meeting with Zuffa executives regarding the potential sale of Strikeforce, Dana White indicated that

...he [White] would come guns a blazing now to steal our fighters. He said we were not close to being profitable because we didn’t have enough fighters in our stable and that we would feel the pain of his full attention if we didn’t sell.⁴²⁶

Zuffa’s horizontal acquisitions and its Fighter contracts were mutually reinforcing. The acquisitions bolstered the exclusionary effects of Zuffa’s Fighter contracts, placing more and more top Fighters under exclusive contracts, thereby making it still more difficult for surviving MMA promoters to compete effectively. Zuffa’s horizontal acquisitions deprived would-be rivals of the acquired rosters. Once Zuffa acquires a roster of Fighters, those Fighters become subjected to its exclusionary contracts, and the remaining non-Zuffa promoters are foreclosed from this pool of talent. As Kurt Otto, President and founder of a now defunct MMA promotion called the IFL, testified:

Q: Do you have an opinion about whether Zuffa’s acquisition of Pride and WEC and WFA, in or about 2006 or 2007, made it more difficult or less difficult to compete with the UFC?

A: Well, you tell me. If I need to go get fighters that are bigger names, they’re not in the woods somewhere up, in a tree, hiding, they’re in a fight organization. And if they’re locked up in a contract prematurely or a contract that was transferred and assumed because of the acquisition, I have no shot of getting that fighter.⁴²⁷

163. The acquired rosters included several highly ranked Fighters. As seen in Figure 1 of Part III.A.1, Zuffa’s share of the Headliner Submarket has increased steadily in the wake of the Strikeforce acquisition, to more than 80 percent. According to FightMatrix, Zuffa has accounted for at least fourteen of the top fifteen pound-for-pound Fighters worldwide since late 2010.

425. ZFL-2508355 at 60.

426. ZUF-00447778.

427. Deposition of Kurt Otto, February 6, 2017, at 246:19-247:12.

164. Zuffa's horizontal acquisitions also reinforced the effects of other aspects of the Challenged Conduct by eliminating would-be rivals to which Fighters might otherwise have switched, potentially defeating or at least mitigating Zuffa's attempts to exercise its market power. Because the horizontal acquisitions caused non-Zuffa promoters to lose access to the top (non-Zuffa) Fighters that generated the most revenue, non-Zuffa promoters were further precluded from offering competitive compensation and promising career paths to Fighters. As explained in Part III.A.1 above, even Zuffa's most prominent would-be rivals offer much more limited career opportunities than does Zuffa, in large part because Zuffa has all of the top Fighters locked up; there is nowhere else to go to fight against the best, and ascend the rankings. As Joe Silva testified, "[b]eating guys with crappy records won't convince anyone [a Fighter is] ready for the big leagues."⁴²⁸

[I]f the majority of your opponents have losing records, they're probably not very good, so it doesn't tell me much about your ability... I would like your guy to have more experience and have experience against better people.⁴²⁹

As Fighter (and Plaintiff) Kyle Kingsbury testified regarding the lack of competitive alternatives during the Class Period, "there's nowhere else to go at this point. Strikeforce didn't exist anymore. Pride didn't exist anymore. And I had no way of saying no [to the UFC]."⁴³⁰ Similarly a 2012 Deutsche Bank document recognizes explicitly that Zuffa's horizontal acquisitions serve Zuffa's interests by depriving Fighters of competitive options:

With the merger of World Extreme Cagefighting and the UFC, the absorption of Pride Fighting Championships, and the acquisition of Strikeforce, the market has become increasingly concentrated, with the risk of fighters defecting reduced significantly.⁴³¹

428. Silva Dep. at 130:12-14.

429. *Id.* at 128:23-129:11

430. See Deposition of Kyle Kingsbury, February 17, 2017, at 119. See also Part IV.B, *supra*.

431. DB-ZUFFA-00006389 at 6397.

165. As explained in Part II.A.1 above, after the Strikeforce acquisition, Zuffa's share of the Relevant Input Market rose to over 90 percent under the Tracked measure, to over 80 percent under the Headliner definition, and to over 70 percent under the Ranked measure. The Herfindahl-Hirschman Index ("HHI") for the Relevant Input Market and Submarket therefore exceeds 8,100 under the Tracked measure,⁴³² exceeds 6,400 under the Headliner Submarket,⁴³³ and exceeds 4,900 under the Ranked measure.⁴³⁴ Each of these HHI values fall well above 2,500, the threshold for a market to be classified as "highly concentrated" according to the antitrust agencies' *Horizontal Merger Guidelines*.⁴³⁵

166. The remaining components of the Challenged Conduct further reinforced its exclusionary effects on rivals. As explained in Part II.A.2 above, record evidence indicates that the intent and effect of Zuffa's counter-programming was to harm competition by impairing rivals: Although counter-programming "was not profitable in itself,"⁴³⁶ it "worked by preventing new competitors from both achieving profitable operations and recouping their investments in high-profile fighters."⁴³⁷ As explained in Part II.A.3 above, record evidence suggests that Zuffa worked with other MMA promoters to impair potential rivals by shutting off access to Fighters. As explained in Part II.B.3 above, Zuffa also (1) prevented other MMA promoters from using clips of Fighters' past fights to promote Fighters who had left the UFC;⁴³⁸ (2) prevented Fighters from

432. Equal to $0.9^2 \times (10,000)$.

433. Equal to $0.8^2 \times (10,000)$.

434. Equal to $0.7^2 \times (10,000)$.

435. *Merger Guidelines*, §5.3.

436. Jesse Baker & Matthew Thomson, *The Ultimate Fighting Championships (UFC): The Evolution of a Sport*, in CASES IN MARKETING MANAGEMENT 115 (Kenneth E. Clow & Donald Baack, eds. 2012).

437. *Id.*

438. Joe Silva admitted that "fighters often used their prior videos as a way to promote themselves" and that "it would be hurtful for [a] promotion not to be able to show past fights. We use – those past fights help to promote future fights... Because that's how you promote a fight. You want to establish what this person has accomplished."

departing from the UFC without also losing their sponsorships; and (3) required venues, sponsors, and broadcasters not do business with other MMA promoters as a condition for doing business with Zuffa. All of this reinforced the exclusionary effects of the Challenged Conduct.

2. The Challenged Conduct Foreclosed a Substantial Share of the Relevant Input Market and Submarket

167. In this section, I present evidence demonstrating that Zuffa's exclusive contracts with Fighters substantially foreclosed competition. One of my foreclosure metrics is the share of Headliners foreclosed by the Challenged Conduct. Given that Headliners are a critical input for staging successful Live MMA Events, Zuffa's foreclosure of Headliners impairs rivals and enables Zuffa to exercise monopsony power over all Fighters in the Relevant Input Market. However, given the uncertainty in determining which Fighters will become Headliners in the future, it is logical that Zuffa would seek to foreclose a broad pool of top-level Fighters (who have the potential to become Headliners) to ensure continued dominance over time. Indeed, Zuffa's exclusive contracts apply to all of its Fighters, not just the top-ranked Fighters. Accordingly, I calculate Zuffa's foreclosure of the Relevant Input Market (measured both ways), as well as the Relevant Input Submarket.

168. As explained below, a large and increasing share of the Relevant Input Market (between 68 percent and 98 percent during the Class Period) and the Relevant Input Submarket (between 50 and 91 percent during the Class Period) has been foreclosed by the Challenged

Therefore, from Zuffa's perspective it was "very important to be able to promote its fighters and its fights by using video of fighters' prior fights." Silva Dep. at 25:2-4; 270:12-271:17.

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Conduct. These foreclosure shares are well in excess of the 20-30 percent thresholds that antitrust scholars have found are sufficient “to infer anticompetitive effects.”⁴³⁹

169. To measure Zuffa’s overall foreclosure of the Relevant Input Market and Submarket, I calculated the ratio of MMA Fighters foreclosed by Zuffa’s exclusionary Fighter contracts to the total number of MMA Fighters in the Relevant Input Market (under both measures) and Submarket. As in the market share calculations, Fighter counts are weighted by MMA promoters’ average PPV and gate revenue per Fighter.

170. I calculate Zuffa’s foreclosure share under two alternative definitions of foreclosure. Under the first definition, all Zuffa Fighters are classified as foreclosed. This definition makes economic sense as a measure of Zuffa’s overall foreclosure of the Relevant Input Market and Submarket, given that Zuffa had the ability to retain virtually any Fighter it wanted to retain (as explained in Part II.C above). Under this definition of foreclosure, Zuffa’s foreclosure share converges to its market share, calculated in Part III.A.4 above. Given Zuffa’s high market shares, it follows that a large and increasing share of the Relevant Input Market and Submarket were foreclosed. Specifically, if all Zuffa Fighters are classified as foreclosed, Zuffa’s foreclosure share of the Relevant Input Market has fluctuated between 94 percent and 99 percent (using the Tracked measure) and between 71 percent and 91 percent (using the Ranked measure) from the beginning of the Class Period through June 2017. Over this same time period, Zuffa’s foreclosure share of the Relevant Input Submarket has fluctuated between 95 percent and 99 percent (if

439. See HERBERT HOVENKAMP, XI ANTITRUST LAW ¶1821, at 152, 160, 164-65 (1998). See also Einer Elhauge, *Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory*, 123 HARV. L. REV. 469 (2009) (“it makes sense (when effects are not directly proven) to require the same 20-30% foreclosure share threshold that is required to infer anticompetitive effects from exclusive dealing”).

Fighters are weighted by revenue) and between 52 percent and 91 percent (if Fighters are weighted by the inverse of their FightMatrix rank).⁴⁴⁰

171. Under the second foreclosure definition, I conservatively classify Zuffa Fighters as foreclosed if (1) the Fighter's contract contained a champion's clause (which all or virtually all did), and (2) the contract had a sufficiently long duration of exclusivity.⁴⁴¹ Specifically, Fighters were considered foreclosed if their contracts constrained them from fighting for and/or freely negotiating with other MMA promoters for a period of at least 30 months. This represents an economically significant share (the majority, or, in many cases, the entirety) of a Fighter's professional MMA career, as explained in Part II.C.2 above.

172. The 30-month threshold is conservative given that antitrust scholars have found that exclusive contracts longer than twelve months in duration can have anticompetitive effects, depending on the industry.⁴⁴² The 30-month threshold is also conservative given that Zuffa routinely leveraged its bargaining power to induce Fighters to renew their contracts before the prior contract had expired, as explained in Part II.C. For example, a Fighter forced to commit to two sequential contracts of 20 months each is effectively foreclosed for 40 months, but would not be classified as foreclosed under this definition.

173. The graph below displays Zuffa's foreclosure share over time for the Relevant Input Market and Submarket when only Fighters whose contracts satisfy the 30-month threshold are considered foreclosed. As seen below, under this definition of foreclosure, I find that large and increasing shares of the Relevant Input Market and Submarket were foreclosed. Specifically,

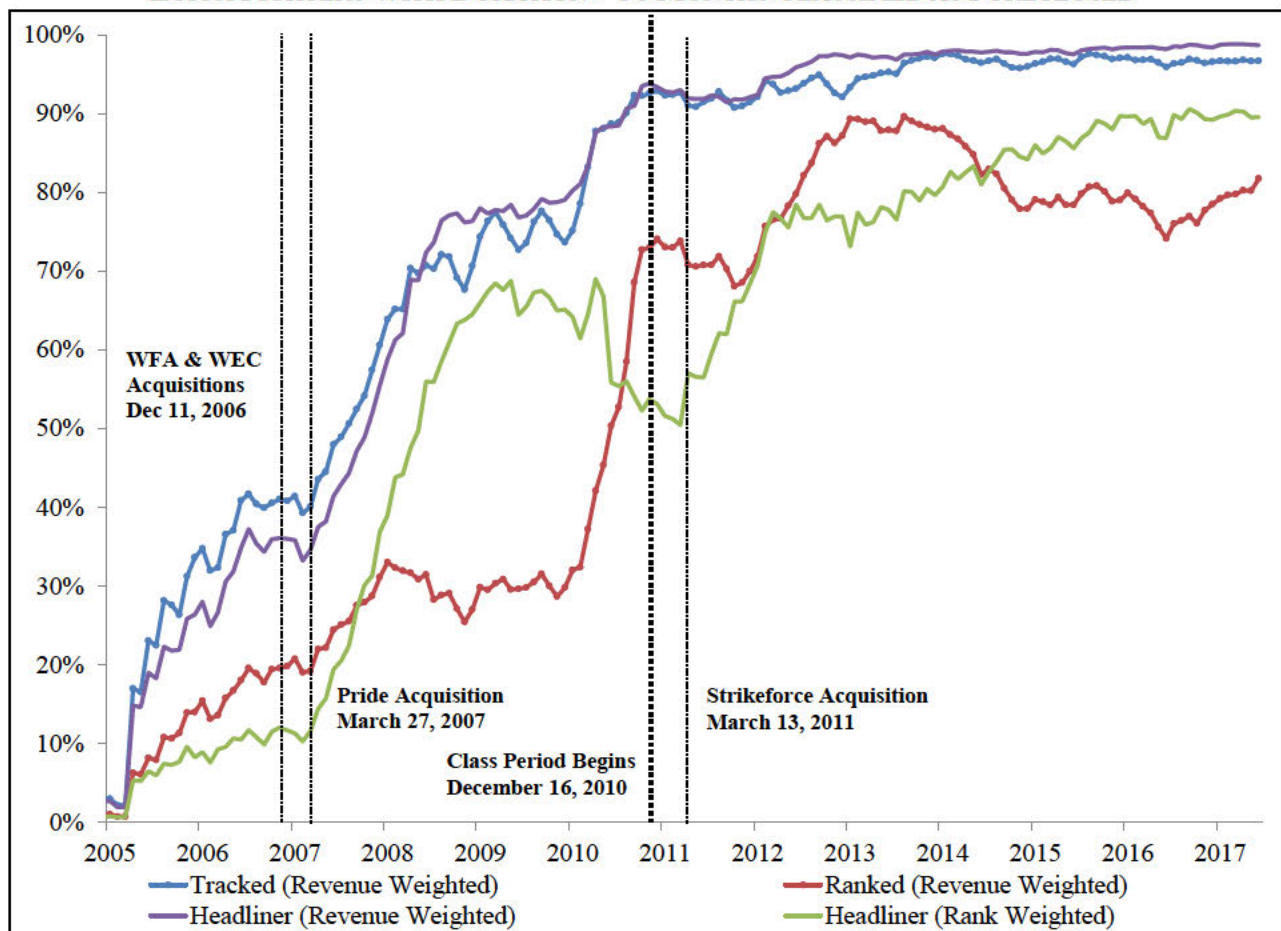
440. See Part III.A.4, *supra*.

441. As explained in Part II.C above, the duration of exclusivity is calculated as the sum of (1) the Term (including the lead-up time to a Fighter's first bout); (2) the option period (if any); (3) the exclusive negotiation period; and, (4) the right to match period.

442. Areeda & Hovenkamp ¶ 1821d3.

Zuffa's foreclosure share of the Relevant Input Market has fluctuated between 91 percent and 98 percent (using the Tracked measure) and between 68 percent and 90 percent (using the Ranked measure) from the beginning of the Class Period through June 2017. Over this same time period, Zuffa's foreclosure share of the Relevant Input Submarket has fluctuated between 91 percent and 99 percent (if Fighters are weighted by revenue) and between 50 percent and 91 percent (if Fighters are weighted by the inverse of their FightMatrix rank)

FIGURE 3: ZUFFA FORECLOSURE SHARE OF RELEVANT INPUT MARKET OVER TIME
ZUFFA FIGHTERS WITH DURATION > 30 MONTHS CLASSIFIED AS FORECLOSED



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3. The Duration and Staggering of Zuffa's Contracts Prevented Meaningful Competition by Potential Rivals

174. As explained in Part II.C.2, the exclusive terms in Zuffa's contracts, combined with Zuffa's leveraging of the Challenged Conduct to renew and extend contracts, allowed Zuffa to prevent rivals from accessing Fighters for a period that was effectively perpetual, relative to Fighters' brief career lengths. Zuffa's top Fighters were bound by even longer-term contracts, and were (like all Fighters) subject to the champion's clause.⁴⁴³

175. In addition, Zuffa's contracts were staggered, with different Fighters reaching the end of their contracts at different points in time. This further ensured that other MMA promoters would not have access to a sufficient stable of Fighters at any given time to compete effectively with Zuffa.⁴⁴⁴ Indeed, on the few occasions when Zuffa has released Fighters to Bellator that, in Zuffa's view, might have allowed Bellator to stage a successful event, Zuffa has taken care to ensure that suitable opponents were not available to Bellator.⁴⁴⁵

4. Zuffa Engaged in Coercive Contracting Behavior and Restricted Fighters' Ability to Terminate Contracts

176. To an economist, coercion in the context of foreclosure can be thought of as the ability of a dominant firm to induce an economic agent to submit to exclusionary terms, by

443. See Part II.C.2, *supra*; see also DB-ZUFFA-00057908, at 912 ("marquee fighters typically have longer-term contracts, with an exclusivity clause...UFC typically has the right to retain athletes who hold a championship title in any weight class at the expiration of their contract for one additional year, thereby ensuring that the Company continues to benefit from such a fighter's potential popularity through additional promotions and events."); WME-ZUFFA-00001150 at *11 (analyzing bouts remaining in Fighter contracts for top-ranked fighters to assess the "Risk of Fighter Compensation Inflation;" showing that champions have, on average, 6.5 bouts remaining in their contracts; Fighters ranked 1-5 have 5.5 bouts remaining on average; Fighters ranked 6-10 have 3.6 bouts remaining on average, and so on).

444. WME_ZUFFA_00013978 ("practical barriers to entry are extremely high. UFC controls the best fighters, on staggered contracts").

445. See Part II.C.1, *supra*.

ensuring that the agent would be made worse off by refusing them.⁴⁴⁶ This can be accomplished by exploiting a collective action problem, in which Fighters would be made individually worse off by refusing Zuffa's exclusionary terms, despite the fact that Fighters would be collectively better off if Fighters coordinated in their refusal.⁴⁴⁷ By this standard, Zuffa clearly engaged in coercive behavior: As explained in Part II.C.1 above, Zuffa exploits its contract provisions to retain virtually any Fighter it desired, and Fighters agreed to Zuffa's terms because the Challenged Conduct left them no better alternative. Similarly, the Challenged Conduct clearly involved Fighters submitting to terms that asymmetrically restricted their ability to terminate their contracts: As explained in Part II.B.1 above, Zuffa's Fighter contracts contain one-way ratchets, giving Zuffa, but not Fighters, the discretion to continue to enforce exclusivity or to discontinue the contract if Zuffa had no further use for the Fighter. Moreover, Fighters were further restricted in their ability to terminate the exclusive terms governing them, given Zuffa's ability to leverage the Challenged Conduct to renew and extend contracts, explained in Part II.C.1 above.

5. All Evidence and Analysis of Foreclosure Is Common to the Classes

177. All of the evidence and analysis demonstrating that Zuffa foreclosed competition to a significant degree is common to the Classes. If I were asked to analyze foreclosure for any single member of either Class, the evidence and analysis would be the same.

D. The Challenged Conduct Generated Substantial Anticompetitive Effects

178. Given that Zuffa had substantial market power and substantially foreclosed competition, anticompetitive effects would be expected and can be inferred. Nevertheless, in this section, I consider whether there is direct evidence that the Challenged Conduct generated

446. See, e.g., Ilya Segal & Michael Whinston, *Naked Exclusion: Comment* 90(1) AM. ECON. REV. 296-309 (2000).

447. *Id.*

anticompetitive effects.⁴⁴⁸ Evidence of anticompetitive effects includes regression analyses demonstrating that Fighter compensation as a share of event revenue declines as Zuffa's foreclosure share increases, after controlling for other factors that might influence Fighter compensation. Additional evidence of anticompetitive effects includes evidence that the Challenged Conduct restricted the supply of Fighter services in the Relevant Input Market and Submarket, and (relatedly) the supply of Live MMA Events in the Relevant Output Market, in addition to raising prices in the Relevant Output Market.

179. I understand that some courts have found that the anticompetitive effects of the conduct at issue should be "considered in light of any procompetitive effects."⁴⁴⁹ As explained in Part VII below, the purported procompetitive justifications that Zuffa has proffered for the Challenged Conduct in prior proceedings are unavailing. To the contrary, the experience of other professional sports leagues suggests that halting (and remediation) of the Challenged Conduct would benefit Fighters, consumers, and the industry as a whole.

1. Regression Models Show Bout Class Compensation Share Is Negatively Correlated with Zuffa's Foreclosure Share, Implying That Increased Foreclosure Share Causes Decreased Compensation Share

180. For the Bout Class, I estimated multivariate regression models in which the dependent variable to be explained is the share of event revenue received by a given Fighter at a given event, while the key independent variable of interest is Zuffa's foreclosure share. For any given bout in any given event, the total compensation each Fighter in the Bout Class receives can be decomposed into four categories; these are (1) show and win purses, (2)

448. Salop, *supra*, at 376; 383 ("In the RRC foreclosure paradigm, the ultimate antitrust concern is not the harm to the rivals, but rather the possible harm to consumers and competitive process from the resulting market power.").

449. *ZF Meritor v. Eaton* at 24.

discretionary/performance pay, (3) PPV royalties, and (4) letters of agreement.⁴⁵⁰ I define a Fighter's total event-level compensation ("Event Compensation") as the sum across these four categories.

181. The dependent variable in my regression model ("Fighter Share") is equal to the share of Zuffa's event-specific revenue ("Event Revenue")⁴⁵¹ paid to a given Fighter that participated in a given event at a given point in time. Zuffa's Event Revenues include revenues from ticket sales, PPV and broadcasting fees, and other event-specific revenue streams. The regression data set includes Fighter Shares for both Zuffa Fighters, and for Strikeforce Fighters prior to Zuffa's acquisition of Strikeforce.⁴⁵²

182. The regression model can be written as follows:

$$S_{ijt} = \beta_0 + \beta_i + \beta_1 D_{jt}^z FS_{jt} + \beta_2 Win_{ijt} + \beta_3 HasRank_{ijt} + \beta_4 Rank_{ijt} + \beta_5 LOA_{ijt} + \beta_6 PPV_{ijt} + \sum_k \lambda_k X_{ijt}^k + \varepsilon_{ijt} \quad (1.1)$$

Above, S_{ijt} is the Fighter Share, equal to the ratio of each Fighter's Event Compensation to Event Revenue for Fighter i participating in event j at time t . The key variable of interest, FS_t , is the share of the Relevant Input Market or Submarket foreclosed by Zuffa as of time t . As explained in Part III.C above, FS_{jt} is defined as the ratio of MMA Fighters foreclosed by Zuffa's exclusionary contracts to the total number of MMA Fighters in the Relevant Input Market or Submarket, with

450. See Part I.B, *supra*; see also ZFL-0000003 (Zuffa Fighter compensation table).

451. The Event Revenues used in my regression analysis were calculated using Zuffa's P&L statements, and include Ticket Sales/Site Fees PPV/Broadcast Sales/Fees (including "Web Buys" and "Other"), event-specific Merchandise, and event-specific Sponsorships.

452. The Appendix describes the construction of the regression data set, which makes use of all available data from Zuffa at a sufficiently granular level to conduct my regression analysis, including the Strikeforce pre-acquisition data produced by Zuffa. As explained below, the Strikeforce pre-acquisition data provide a benchmark for the share of revenue that Fighters would receive in the but-for world.

Fighters weighted by PPV and gate revenues to reflect differences in the average quality of Fighters across different MMA promoters.⁴⁵³

183. The variable D_{jt}^z is set equal to one for all Zuffa events, and to zero for non-Zuffa events (that is, Strikeforce events prior to Zuffa's acquisition of Strikeforce). The coefficient β_1 therefore captures two effects: (1) the effect of Zuffa's increasing foreclosure share over time on Zuffa Fighter Shares, relative to those of Zuffa Fighters in time periods with lower foreclosure shares, after controlling for all other variables in the regression; and (2) the effect of Strikeforce Fighter Shares prior to the acquisition exceeding Zuffa Fighter Shares (after controlling for all other variables in the regression). Therefore, both the Strikeforce pre-acquisition Fighter Shares and Zuffa Fighter Shares during periods of (relatively) low foreclosure effectively serve as benchmarks for the Fighter Shares that Zuffa Fighters would have received in the but-for world. As explained below, my regression results show that β_1 is negative, and both statistically and economically significant. This result confirms that Zuffa's foreclosure of the Relevant Input Market and Submarket suppressed compensation for the Bout Class: But for the Challenged Conduct, Zuffa Fighter Shares would have been significantly higher.⁴⁵⁴

453. My regression results are robust to different weighting schemes, even if Fighters are unweighted. In particular, the regression shows a negative and statistically and economically significant relationship between Zuffa's foreclosure share and the Fighter Share of revenues if the foreclosure share is calculated in any of the following ways: (1) weighting Fighters by revenue per Fighter; (2) weighting Fighters by the inverse of the Fighter's rank; or (3) simply using an unweighted count of Fighters.

454. Using Strikeforce pre-acquisition Fighter Shares as a benchmark is consistent with elementary economics, which shows that competitive firms pay labor a share of revenue commensurate with labor's productivity, based on the marginal product of labor. *See, e.g.,* ROY RUFFIN & PAUL GREGORY, PRINCIPLES OF MICROECONOMICS 331-336 (Harper Collins 5th ed. 1993); *see also* MICHAEL KATZ & HARVEY ROSEN, MICROECONOMICS 264-65, 276-77 (Irwin McGraw-Hill 3rd ed. 1998). In contrast, firms that wield monopsony power pay a smaller share of revenue of labor, by restricting both the amount of labor hired and the compensation paid to labor. *Id.* Therefore, although the Challenged Conduct, by reducing revenue opportunities for rival promoters, might have suppressed the *level* of compensation that Strikeforce (and other would-be rivals) could afford to pay to Fighters, the *share* of revenue paid to Fighters by Strikeforce remains an economically relevant benchmark for estimating but-for compensation.

184. The remaining variables in equation (1.1) above control for other factors that may influence Fighter-compensation shares. The term β_i denotes Fighter-specific fixed effects, which control for all individual, Fighter-level attributes that remain constant over time. The variable Win_{ijt} is an indicator equal to one if the Fighter won the bout (and thus received the win purse), and zero otherwise. The variable $HasRank_{ijt}$ is an indicator equal to one if FightMatrix records a ranking for Fighter i at the time of event j , and zero otherwise. The variable $Rank_{ijt}$ is an integer corresponding to the Fighter's rank; it is set equal to zero for non-ranked Fighters. The variables LOA_{ijt} and PPV_{ijt} are indicators equal to one if the Fighter was entitled to additional compensation pursuant to a Letter of Agreement or an agreement to receive PPV royalties, and zero otherwise.

185. The variables X_{ijt}^k denote the remaining control variables in the model. Included in X_{ijt}^k are controls for bout-specific performance data reported in the FightMetric database, such as strikes attempted, takedowns landed, and so on.⁴⁵⁵ Additional controls include variables capturing the Fighter's win/loss record, fixed effects for gender, promoter, weight class, year, country, and venue, as well as a time trend. Also included are indicator variables for the manner in which the fight ended (e.g., submission, technical knockout, disqualification, etc.). Descriptions of and summary statistics for the regression variables are reported in Tables 4 and 5.

Moreover, my regression analysis confirms that Zuffa's foreclosure (before the Class Period) did *not* significantly affect the Fighter Shares of pre-acquisition Strikeforce Fighters. To test this hypothesis, I estimated regressions identical to equation (1.1) above, except that they also included FS interacted with $(1 - D_{jt}^z)$. These alternative regression models can be written $S_{ijt} = \beta_0 + \beta_i + \beta_1 D_{jt}^z FS_{jt} + \alpha (1 - D_{jt}^z) FS_{jt} + [Controls] + \varepsilon_{ijt}$. In these alternative models, the coefficient α measures the incremental effect of Zuffa's foreclosure on non-Zuffa Fighters. The coefficient α was found to be statistically insignificant, indicating that Zuffa's foreclosure affected the Fighter Shares of Zuffa Fighters, but not Strikeforce pre-acquisition Fighters. (The coefficient β_1 remained negative and statistically and economically significant, consistent with the regression results reported below).

455. See, e.g., <http://www.fightmetric.com/fight-details/ea8eaf881d38713e>.

TABLE 4: REGRESSION VARIABLES

Variable	Source	Description
<i>Foreclosure Share [Tracked]</i>	Zuffa	Calculated using the “Tracked” Input Market Measure.
<i>Foreclosure Share [Ranked]</i>	Zuffa	Calculated using the “Ranked” Input Market Measure.
<i>Foreclosure Share [Headliner]</i>	Zuffa	Calculated using the “Headliner” Input Market Measure.
<i>Fighter Event Compensation</i>	Zuffa	Show + Win + PPV +LOA.
<i>Zuffa Event Revenue (Millions)</i>	Zuffa	Ticket sales + PPV/broadcasting + Event-specific sponsors
<i>Fighter Share</i>	Zuffa	[Fighter Event Compensation]/[Event Revenue].
<i>Gender</i>	Zuffa	Gender of the Fighter (Male = 1; Female = 0).
<i>Fight Ending Round</i>	Zuffa	Final round number of the bout.
<i>Win Flag</i>	Zuffa	Indicator variable denoting a winning bout (Win=1; Loss=0).
<i>HasRank</i>	FightMatrix	Equal to one if Fighter ranked in FightMatrix database as of event date; zero otherwise.
<i>Rank</i>	FightMatrix	Equal to Fighter’s rank in FightMatrix database as of event date; zero if not ranked.
<i>LOA</i>	Zuffa	Equal to one if Fighter entitled to compensation pursuant to Letter of Agreement; zero otherwise.
<i>PPV</i>	Zuffa	Equal to one if Fighter entitled to PPV compensation; zero otherwise.
<i>Wins</i>	SherDog	Number of prior wins for Fighter.
<i>Fights</i>	SherDog	Number of prior fights for Fighter.
<i>Total Knockdowns</i>	FightMetric	Total knockdowns achieved in a bout.
<i>Total Strikes Landed</i>	FightMetric	Total number of strikes landed in a bout.
<i>Total Strikes Attempted</i>	FightMetric	Total number of strikes attempted in a bout.
<i>Percent of Strikes Landed</i>	FightMetric	[Total Strikes Landed]/[Total Strikes Attempted].
<i>Significant Strikes Landed</i>	FightMetric	Total number of significant strikes landed in a bout.
<i>Significant Strikes Attempted</i>	FightMetric	Total number of significant strikes attempted in a bout.
<i>Percent of Sig. Strikes Landed</i>	FightMetric	[Significant Strikes Landed]/[Significant Strikes Attempted].
<i>Takedowns Landed</i>	FightMetric	Total number of takedowns executed in a bout.
<i>Takedowns Attempted</i>	FightMetric	Total number of takedowns attempted in a bout.
<i>Percent of Takedowns Landed</i>	FightMetric	[Takedowns Landed]/[Takedowns Attempted].
<i>Submissions Attempted</i>	FightMetric	Total number of submissions attempted in a bout.
<i>Offensive Passes</i>	FightMetric	Total number of position improvements achieved in a bout.
<i>Sweeps</i>	FightMetric	Total number of sweeps (reversals) achieved in a bout.

Notes: Regressions include fixed effects by Fighter, win method, gender, weight class, card placement, bout number, promoter, year, country, venue, and a time trend.

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TABLE 5: REGRESSION SUMMARY STATISTICS

Variable	Mean	SD	Min	Max
<i>Foreclosure Share [Tracked]</i>	0.888	0.143	0.241	0.972
<i>Foreclosure Share [Ranked]</i>	0.679	0.217	0.0950	0.887
<i>Foreclosure Share [Headliner]</i>	0.898	0.158	0.199	0.986
<i>Fighter Event Compensation (Thousands)</i>	\$100.9	\$338.2	\$2	\$8,000
<i>Zuffa Event Revenue (Millions)</i>	\$10.87	\$10.53	\$0.161	\$61.19
<i>Fighter Share*</i>	0.0120	0.0269	0.000105	0.806
<i>Gender</i>	0.964	0.185	0	1
<i>Fight Ending Round</i>	2.328	1.002	1	5
<i>Win Flag</i>	0.494	0.500	0	1
<i>HasRank</i>	0.957	0.203	0	1
<i>Rank</i>	59.52	74.79	0	594
<i>LOA</i>	0.0379	0.191	0	1
<i>PPV</i>	0.0210	0.143	0	1
<i>Wins</i>	3.751	3.543	0	24
<i>Fights</i>	6.075	4.995	1	32
<i>Total Knockdowns</i>	0.219	0.489	0	3
<i>Strikes Landed</i>	50.14	41.52	0	361
<i>Strikes Attempted</i>	95.69	73.35	0	500
<i>Percent of Strikes Landed</i>	0.525	0.188	0	1
<i>Significant Strikes Landed</i>	31.20	26.81	0	238
<i>Significant Strikes Attempted</i>	74.39	63.57	0	496
<i>Percent of Sig. Strikes Landed</i>	0.437	0.173	0	1
<i>Takedowns Landed</i>	1.137	1.730	0	21
<i>Takedowns Attempted</i>	2.994	3.774	0	33
<i>Percent of Takedowns Landed</i>	0.280	0.358	0	1
<i>Submissions Attempted</i>	0.461	0.924	0	9
<i>Offensive Passes</i>	1.152	2.065	0	26
<i>Sweeps</i>	0.140	0.424	0	5
Observations:	6,942			

*Mean Fighter Share, like all other variables above, calculated as simple average. The weighted average Fighter Share is equal to the ratio of mean Fighter Event Compensation to mean Zuffa Event Revenue, or $[\$100,900]/[\$10,870,000] = 0.9$ percent. *Notes:* Regressions include fixed effects by Fighter, win method, weight class, card placement, bout number, promoter, year, country, venue, and a time trend. Summary statistics limited to Zuffa events.

186. The regression results for the Bout Class are reported in Table 6 below. The explanatory variables in the model collectively explain a large proportion (more than 65 percent) of the variation in the dependent variable (as seen in the *R*-squared statistics). In the first two columns, the *Foreclosure Share* variable is calculated using the Tracked measure of the Relevant Input Market described Part III.A.1 above. In the third and fourth columns, the *Foreclosure Share*

variable is calculated using the Ranked measure of the Relevant Input Market, also described in Part III.A.1 above. Regardless of how the Relevant Input Market is defined, the coefficient on *Foreclosure Share* is negative and highly statistically significant in all specifications. That is to say: An increase (decrease) in the *Foreclosure Share* is associated with a decrease (increase) in the share of Event Revenue paid to Fighters. This result holds regardless of whether the *Foreclosure Share* is measured using the Tracked or Ranked measure of the Relevant Input Market or if the Headliner Submarket is used. This confirms that, (a) by foreclosing a substantial share of the Relevant Input Market, Zuffa impaired potential rivals sufficiently to be able to undercompensate its Fighters generally; and (b) simply by foreclosing Headliners, Zuffa impaired potential rivals sufficiently to allow Zuffa to undercompensate Zuffa Fighters generally.

187. For example, the result in the third column, for Headliners (with an the estimated coefficient on *Foreclosure Share* of -0.0319) implies that, if the *Foreclosure Share* were to decrease from 90 percent to 80 percent, the Fighter Share for the average Fighter would increase by $(0.9-0.8)*(0.0319) = 0.00319$, or about 0.319 percentage points. This represents a very substantial increase: Given that the average Fighter Share is only about 1.2 percent (as seen in Table 5 above), the average Fighter's compensation would increase by about 27 percent (equal to $0.00319/0.012$) if the *Foreclosure Share* were to decrease from 90 percent to 80 percent. These results confirm that the Challenged Conduct suppressed compensation for the Bout Class by a statistically and economically significant amount.⁴⁵⁶

456. This measure of economic harm is conservative because it measures only the exclusionary effects of Zuffa's Fighter contracts, and not the exclusionary effects of other aspects of the Challenged Conduct reviewed in Parts II.A and II.B above. As a result, this measure of economic harm is appropriate regardless of whether the other conduct is found to be anticompetitive. Put differently, even if the Challenged Conduct consisted solely of Zuffa's exclusionary contracts, my analysis of foreclosure analysis the resulting estimates of economic harm would remain the same.

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TABLE 6: REGRESSION OUTPUT (BOUT CLASS)

Explanatory Variable	Dependent Variable: Fighter Share		
	Tracked	Ranked	Headliner
<i>Foreclosure Share</i>	-0.0329** (0.0434)	-0.0427** (0.0317)	-0.0319** (0.0462)
<i>Gender</i>	-0.00653 (0.207)	-0.00552 (0.286)	-0.00653 (0.208)
<i>Fight Ending Round</i>	-0.000109 (0.890)	-9.04e-05 (0.909)	-0.000108 (0.892)
<i>Win Flag</i>	0.000637 (0.572)	0.000664 (0.557)	0.000649 (0.565)
<i>HasRank</i>	0.000144 (0.929)	0.000106 (0.948)	0.000108 (0.947)
<i>Rank</i>	3.19e-06 (0.643)	3.60e-06 (0.605)	3.28e-06 (0.634)
<i>LOA</i>	0.0221*** (0.00256)	0.0218*** (0.00339)	0.0221*** (0.00253)
<i>PPV</i>	-0.00645 (0.336)	-0.00632 (0.345)	-0.00643 (0.337)
<i>Wins</i>	0.00324*** (0.00826)	0.00323*** (0.00871)	0.00324*** (0.00830)
<i>Fights</i>	0.000416 (0.884)	0.000153 (0.956)	0.000418 (0.884)
<i>Fight Of The Night</i>	0.00860*** (8.88e-10)	0.00858*** (9.21e-10)	0.00860*** (8.76e-10)
<i>Fighter KO Of The Night</i>	0.00424** (0.0300)	0.00422** (0.0308)	0.00424** (0.0296)
<i>Fighter Submission Of The Night</i>	0.00602*** (1.03e-05)	0.00608*** (8.09e-06)	0.00600*** (1.13e-05)
<i>Fighter Performance Of The Night</i>	0.0102*** (3.96e-06)	0.0102*** (3.90e-06)	0.0102*** (4.08e-06)
<i>Win Method: Could Not Continue</i>	-0.00860* (0.0558)	-0.00910** (0.0446)	-0.00857* (0.0572)
<i>Win Method: Disqualification</i>	-0.000951 (0.722)	-0.00227 (0.404)	-0.000880 (0.743)
<i>Win Method: Decision - Major</i>	0.00180 (0.548)	0.00147 (0.628)	0.00179 (0.549)
<i>Win Method: Decision - Split</i>	-0.00332 (0.139)	-0.00335 (0.146)	-0.00334 (0.136)
<i>Win Method: Decision - Unanimous</i>	-0.00225 (0.340)	-0.00220 (0.361)	-0.00226 (0.336)
<i>Win Method: Knockout / TKO</i>	-0.00273 (0.119)	-0.00269 (0.137)	-0.00274 (0.116)
<i>Win Method: Overturned</i>	-0.00130 (0.631)	-0.00137 (0.616)	-0.00131 (0.626)
<i>Win Method: Submission</i>	-0.00303* (0.0896)	-0.00305 (0.101)	-0.00303* (0.0883)
<i>Total Knockdowns</i>	0.00111 (0.215)	0.00118 (0.198)	0.00112 (0.214)
<i>Strikes Landed</i>	-5.33e-05 (0.530)	-8.31e-05 (0.321)	-5.19e-05 (0.541)
<i>Strikes Attempted</i>	2.90e-05 (0.699)	5.52e-05 (0.454)	2.81e-05 (0.708)

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TABLE 6 (CONTINUED)

Explanatory Variable	Tracked	Ranked	Headliner
<i>Percent of Strikes Landed</i>	0.00854** (0.0207)	0.00844** (0.0216)	0.00856** (0.0206)
<i>Significant Strikes Landed</i>	3.76e-05 (0.677)	6.53e-05 (0.459)	3.55e-05 (0.694)
<i>Significant Strikes Attempted</i>	-2.43e-05 (0.747)	-4.93e-05 (0.506)	-2.31e-05 (0.759)
<i>Percent of Sig. Strikes Landed</i>	-0.00532 (0.135)	-0.00512 (0.150)	-0.00537 (0.132)
<i>Takedowns Landed</i>	0.000356 (0.222)	0.000363 (0.214)	0.000354 (0.226)
<i>Takedowns Attempted</i>	-0.000205* (0.0946)	-0.000201* (0.0988)	-0.000205* (0.0937)
<i>Percent of Takedowns Landed</i>	-0.00141 (0.244)	-0.00150 (0.216)	-0.00140 (0.248)
<i>Submissions Attempted</i>	-0.000198 (0.456)	-0.000189 (0.476)	-0.000195 (0.462)
<i>Offensive Passes</i>	0.000420** (0.0497)	0.000413* (0.0550)	0.000418* (0.0510)
<i>Sweeps (Reversals)</i>	-0.000698 (0.231)	-0.000679 (0.239)	-0.000703 (0.228)
<i>Trend</i>	0.0107** (0.0135)	0.0139*** (0.00762)	0.0107** (0.0140)
<i>Constant</i>	-0.131** (0.0493)	-0.185** (0.0212)	-0.133** (0.0487)
<i>Fighter Fixed Effects?</i>	Yes	Yes	Yes
<i>Observations</i>	7,154	7,154	7,154
<i>R-Squared</i>	0.657	0.657	0.656

Notes: Robust p-values in parentheses. *** p<0.01, ** p<0.05, * p<0.1 Regressions include fixed effects by Fighter, gender, win method, weight class, card placement, bout number, promoter, year, country and venue.

2. Additional Evidence Shows That the Challenged Conduct Suppressed Fighter Compensation Below Competitive Levels

188. As explained below, additional evidence that the Challenged Conduct suppressed Fighter compensation below competitive levels includes: (1) evidence that Zuffa has reduced the share of revenue paid to Fighters over time (as the degree of foreclosure rose); (2) evidence that Zuffa pays a significantly lower share of its revenues than Strikeforce (before the acquisition) or Bellator; and (3) a natural experiment in which Zuffa unilaterally restricted compensation of its Fighters by imposing a new sponsorship tax. In the absence of the Challenged Conduct, Zuffa's ability to suppress Fighter compensation in these ways would have been at least partially counteracted by increased competitive pressure from other MMA promoters.

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189. Zuffa's internal analyses indicate that Fighter compensation as a percentage of UFC event revenue has *decreased* over time, peaking at 25.8 percent in 2007, decreasing through 2013, and falling from 22.0 percent to 18.5 percent between 2010 and 2011, when Zuffa acquired Strikeforce and shut it down.⁴⁵⁷ A presentation prepared by WME-IMG, Zuffa's parent, includes analysis confirming that Fighter "costs" (Zuffa's payments to Fighters) fluctuated between 16 and 19 percent of revenue between 2012 and 2015.⁴⁵⁸ The presentation states that the risk of "Fighter Compensation Inflation"⁴⁵⁹ was "the most asked question by financing sources, and is a critical cost that we must actively manage."⁴⁶⁰ According to the document, Zuffa management intends to "contain" Fighter costs at no more than 20 percent of revenue.⁴⁶¹ Zuffa could not profitably control the share of revenue going to Fighters unless it wielded monopsony power. In 2007, Deutsche Bank marketing materials (prepared for Zuffa's lenders) indicated that "[t]he UFC believes that its dominant position in the MMA industry will allow them to contain fighter costs."⁴⁶² Thus Zuffa itself acknowledged it was able to suppress Fighter compensation as a result of its monopsony power. In a competitive labor market, Zuffa would not be to do so.⁴⁶³

190. Zuffa also pays Fighters a much smaller proportion of its revenue than did Strikeforce, a reasonable proxy for the competitive compensation share in the MMA industry.

457. ZFL-1484035 (all events); ZFL-1484036 (non-PPV events); ZFL-1484037 (PPV Events). Another internal Zuffa presentation estimates that Fighter compensation is 16% of total company revenue for all events occurring from 2006-2011. ZFL-1392468 at 69. One document indicates that 90 percent of Zuffa Fighters, including top tier Fighters, are "unhappy with compensation." See John Cholish: '90% Including Some Top Tier Fighters' Unhappy With UFC Pay, Full Contact Fighter (Friday, May 31, 2013), available at <http://fcfighter.com/post/john-cholish-says-90-including-some-top-tier-fighters-unhappy-with-ufc-pay>.

458. WME-ZUFFA-00001150 at *11.

459. *Id.*

460. *Id.*

461. *Id.*

462. DB-ZUFFA-00030406 at 07.

463. In a competitive labor market, compensation is set revenue paid to labor is determined by the productivity of labor, as opposed to the monopsony power of the firm that hires labor. See, e.g., ROY RUFFIN & PAUL GREGORY, PRINCIPLES OF MICROECONOMICS 331-336 (Harper Collins 5th ed. 1993); see also MICHAEL KATZ & HARVEY ROSEN, MICROECONOMICS 264-65, 276-77 (Irwin McGraw-Hill 3rd ed. 1998).

Prior to its acquisition by Zuffa, Strikeforce paid about 60 to 70 percent of its event revenue to Fighters.⁴⁶⁴ Scott Coker, the former CEO of Strikeforce, explained that Strikeforce paid “minimum 68 percent of our gross income to our athletes pay structure... when we structured Strikeforce, we structured...[as] if there was a union.”⁴⁶⁵ This is nearly three times the level Zuffa pays its Fighters (60 percent versus 19 percent of revenues). Similarly, financial data produced by Bellator indicate that Bellator pays out approximately 45 percent of its revenue to Fighters—more than twice as much as Zuffa.⁴⁶⁶

191. Zuffa has also unilaterally and substantially reduced other forms of Fighter compensation profitably. Beginning in or about 2009, Zuffa began requiring that sponsors pay Zuffa a brand affiliation fee or “sponsorship tax” for the right to sponsor Fighters at UFC events.⁴⁶⁷ Prior to that, UFC Fighters were free to encourage sponsors to pay them to advertise on their uniforms in the Octagon, and many did so, earning substantial revenues.⁴⁶⁸ Zuffa extended the sponsorship tax to different categories of sponsors over time, increasingly diverting sponsorship revenue to Zuffa and away from Fighters.⁴⁶⁹ To be approved to sponsor a Fighter

464. In 2010, the year before it was acquired by Zuffa, Strikeforce paid fighters 72.5 percent of total event revenues. In 2011, the year it was acquired, it averaged 63.7 percent of revenues paid to fighters. *See* ZFL-1472338.

465. “When I was in business with the Silicon Valley Sports & Entertainment Group and half the company was owned by the group that owns the San Jose Sharks [i.e. pre-acquisition by Zuffa], we kind of set up our pay structure based upon like a hockey union would do. We paid minimum 68 percent of our gross income to our athletes pay structure. If there was a union, I don’t think that would take us off guard by any means because when we structured Strikeforce, we structured based around kind of like if there was a union.” *See* <http://www.mmafighting.com/2015/5/11/8581653/scott-coker-on-ufc-reebok-sponsorship-program-bellators-phones-been>

466. *See* Part VI.A, *infra*.

467. Batchvarova Dep. at 26:9-27:4 (“At the time apparel companies ... that were sponsoring athletes going into the octagon were paying an affiliation fee.”); *see also* ZUF-00017896, ZUF-00086103, LESPLAINTIFFS-0032374 at 74.

468. *See* Part I.D, *supra*.

469. *See* ZFL-2193737 (Aug. 4, 2009 email from Mersch to Nate Quarry: “The only changes in the sponsorship world pertain to tshirt/apparel companies... in short, any tshirt company wishing to sponsor UFC fighters must join the UFC approved sponsor program.”). *See also* ZFL-1974115 (Mersch writes: “NOTICE – For all Zuffa events going forward, only approved on-line retailers will be allowed to sponsor fighters. To that end, you must have a separately executed sponsorship agreement with Zuffa to be able to sponsor fighters for any events. This new policy will kick in

within a given category (such as apparel or supplements), sponsors were required to sign a “Brand Affiliation Agreement” or “League Affiliation Agreement” that required payment of the fee to Zuffa.⁴⁷⁰ When small sponsors could not afford the sponsorship tax, Fighters were obliged (if they already had a sponsorship relationship), to give them up, and if not, to turn them down.⁴⁷¹ In addition to driving many small companies away from sponsoring their chosen Fighters, these sponsorship taxes also forced the sponsor to negotiate directly with Zuffa, bypassing the Fighter entirely.⁴⁷² One agent stated that other MMA promoters do not impose a sponsorship tax, and

beginning with UFC 116 on July 3, 2010.”); ZFL-2152714 (Jun. 10, 2011 email from Mersch to Nate Quarry noting “Supplements – BSN is out as the ‘official’ sponsor of the UFC so the category is wide open but there will likely be another BSN type dominant player and then the rest will have to pay a fee to play in the space of probably between \$50K-\$500K depending on how much the primary wants to spend.”). In October 2011, after the BSN contract ended, Zuffa signed an agreement with Muscle Pharm that required Zuffa to charge other supplement companies an annual sponsor tax that increased depending on the number of individual Fighters being sponsored: \$15,000 for one Fighter; \$25,000 for two Fighters; \$50,000 for three to four Fighters; \$100,000 for five to eight Fighters; and \$200,000 for more than eight Fighters. *See* ZFL-1402629 at 29; ZFL-1402631 at 31 (“I have explained to you we are contractually required to abide by the schedule... We DO NOT have any discretion on this and cannot charge you less.”). *See also* ZFL-2482323 at 25 (Showing that the amount paid by the sponsor to Zuffa for the right to sponsor Fighters depends on the number of Fighters sponsored).

470. *See, e.g.*, ZFL-2177960 (In June 2011, Kristin Gifford writes: “At this point we do not have an executed League Affiliation Agreement with Tokyo Five. Therefore, Tokyo Five will not be allowed to sponsor UFC or Strikeforce fighters until the Agreement is completed.” At the time, the fee for apparel companies was \$50,000 to sponsor UFC Fighters, \$35,000 to sponsor Strikeforce Fighters, or \$75,000 to sponsor both. *Id.*; *see also* ZFL-2177961; ZFL-2244949, at 50 (In February 2010 Mersch writes to Nate Quarry: “if And 1 (or any other sponsor) doesn’t want to pay a fee or negotiate to pay to associate their brand name with the UFC brand, they’re not going to be part of our events and not going to be allowed to sponsor anyone.”).

471. *See* ZFL-2176645 (4/27/2011: Nate Marquardt’s sponsor won’t be able to afford sponsorship tax because they are only sponsoring the one fighter). *See also* ZFL-2205733 at 33 (7/11/2011: “Neither Jiu Jitsu Pro Gear nor Jacare’s other sponsors will be able to afford the annual \$35,000 sponsorship tax levied by Forza.”); ZFL-2582134 (UFC sponsor Hooligans United writes to Strikeforce in 2009, “I was just finalizing a deal with a manager for a UFC fighter I was going to sponsor but was nixed at the last moment when they put in my paperwork. Apparently the UFC wants to control how many clothing companies advertise/sponsor their fighters shirts/shorts and do so by weeding out the smaller guys like myself and by charging the bigger g[u]ys ie Affliction huge fees (meanwhile that’s less money for the actual fighters). I am just a (very) small company who was putting together some money to get a little exposure via the UFC route but as I said, they sq[u]ashed me!”).

472. Michael Mersch explains to a fighter asking about a potential sponsor: “The standard procedure is to have the prospective sponsors contact me directly and I will handle working out an agreement with them so they can sponsor you and other fighters in the UFC.” LEPLAINTIFFS-0028446. Mersch was also cavalier about the intended purpose of the sponsorship tax, stating in one email to a sponsor that the tax money was simply “money for Dana and Lorenzo.” ZFL-1367079. Another: “Well tell them to stop being cheap and pay me some money.” ZFL-1487968

indicated that his client lost 55 percent of his promised net sponsorship amounts as a result of Zuffa's sponsorship policies.⁴⁷³

192. Record evidence indicates that Zuffa suffered no significant Fighter defections as a result of imposing the sponsorship tax.⁴⁷⁴ In response to a January 2009 article concerning Zuffa's sponsorship tax, Strikeforce executives wrote that the "UFC will be able to impose this solely on the basis that they are perceived as the pinnacle MMA organization for the majority of fighters as of today."⁴⁷⁵ Strikeforce declined to impose a sponsorship tax, reasoning that this tactic "could give [Strikeforce] a slight advantage in negotiations with fighters."⁴⁷⁶ However, only one Fighter (Dan Henderson) actually defected to Strikeforce, and Henderson's contract was eventually transferred back to Zuffa when it acquired Strikeforce. Zuffa proceeded to apply its sponsorship tax to Fighters from the newly acquired company.⁴⁷⁷ Accordingly, Zuffa's imposition of the sponsorship tax constitutes a natural experiment demonstrating Zuffa's ability to unilaterally and profitably restrict Fighter compensation, with other MMA promoters unable to provide competitive discipline in the labor market. In the absence of the Challenged Conduct, its ability to do so would have been curtailed.

473. *Id.* at 22-23 ("I know many promoters who do not ask for money and the fighters can get sponsors whoever [*sic*] they like..." The agent estimates that a Fighter that had previously netted \$200,000 "ends up with 130k less and nets only 70K" because of Zuffa's restrictive policies.). *See also* ZFL-2486240 (Unmarked document from Batchvarova's custodial files stating "Original structure – we take over apparel + sponsorship ... Look at reducing the numbers for the lower guys by 40%-50%.").

474. *See* ZFL-2244949. In response to concerns aired by Nate Quarry over new sponsorship policies, Michael Mersch wrote that: "I don't agree that the UFC [*is*] 'losing top fighters because of these policies.'"

475. ZUF-00418378.

476. *Id.*

477. *See* ZFL-1402822 at 23 (Agent for Alistair and Velnatijn complains on June 9, 2011 to Mersch that "What if they cant [*sic*] pay these sponsors, this was never an issue before you guys took over." Mersch responds "If they're not willing to pay for advertising like everyone else has to, that's their choice."). *See also* REV00089858, where Michael Mersch opines that Zuffa is not losing fighters due to these policies.

3. The Challenged Conduct Restricted the Supply of Fighter Services

193. As explained below, Zuffa restricted the supply of Fighter services by consistently maintaining significantly more Fighters under contract than it could use, creating forced periods of inactivity during which Fighters were not paid and were not available to other MMA promoters to fight. In addition, Zuffa pursued a strategy of limiting the number of career paths available to Fighters. In the absence of the Challenged Conduct, Zuffa's ability to restrict the supply of Fighter services in these ways would have been at least partially counteracted by increased competitive pressure from other MMA promoters.

194. Zuffa was consistently able to keep Fighters bound by the exclusionary provisions in its contracts—and thus unavailable to other MMA promoters—while simultaneously promoting an insufficient number of bouts given the number of Fighters on its roster. Record evidence indicates that Zuffa was able to suppress the number of events that Fighters would participate below what Fighters would otherwise prefer,⁴⁷⁸ and that Zuffa consistently maintained significantly more Fighters under contract than it could use in bouts.⁴⁷⁹ In his deposition, Joe Silva

478. For example, in January 2015, Fighter Joe Benavidez texted Sean Shelby expressing frustration about the infrequency of his fights: "Damn it. I don't wanna only fight twice again this year. (Like I have 3 out of the last 4 years) I thought I had an opponent... What's the deal?" ZFL-1892287. Shelby replies, "You have an opponent. I have 40 other guys in your weight class and 60 bantamweights, 80 featherweights. And I have to create contenders above all else right now. A logjam I hope is over before summer[.]" ZFL-1892294. Benavidez then replies "I just feel I'm in my prime and only fighting twice a year. It's killing me dude." ZFL-1892308. Shelby responds at: "I'm doing the best I can right now." ZFL-1892315.

479. See, e.g., ZFL-2444687 (Joe Silva states in August 2011: "Have too many guys. Look how long it's taking me to get your other guys fights."); ZFL-1394508 (In December of 2012, Silva tells White, Fertitta and others that Zuffa has "way too many guys under contract right now"); Zuffa's Response to Plaintiffs' Request for Admission No. 22 (On February 22, 2013, Dana White stated publicly that "We have 470-something guys under contract, okay? We have over 100 guys too many. We have over 100 guys too many on the roster right now[.]"); Dana White Deposition Ex.72 (Dana White states in February 2013 "There's over a 100 guys. We're heavy."); TPS-0021184 (Joe Silva states in March 2013 "No space to bring in locals. Have to cut 100 guys."); ZUF-00325418 (Joe Silva states in January 2011 "I need to cut around 5 guys a show. If I cut 5 guys a show and don't sign anyone new for 10 shows I STILL have too many guys under contract."); Dana White Deposition Ex. 74 (Dana White states in October 2013 "I keep telling you guys our roster is too full. Guys have to get fights and it's like every time after a show when we cut a guy, and they're like "Fuck you Dana White, you're an idiot. This guy's the ..." Shut the f -- k up and let us run our business. The roster is too full."); Kevin Iole, *In cutting Jake Shields, UFC takes a page out of NFL's playbook*, YAHOO SPORTS, Apr. 7,

testified that, from at least 2010 to 2015, he had “been complaining to managers and fighters and others” that Zuffa “had more fighters under contract than [Zuffa] had fights to give them.”⁴⁸⁰ Silva also testified that he kept Fighters under contract who he otherwise would have cut; his rationale was to keep these Fighters away from Bellator.⁴⁸¹ Kurt Otto, President and founder of a now defunct MMA promotion called the IFL, testified that it was his perception that Fighters at Zuffa were “collecting dust.”⁴⁸² Record documents discuss the “shelving” of Fighters by Zuffa.⁴⁸³

195. In the absence of the Challenged Conduct, the excess Fighters on Zuffa’s roster could have earned income from other promoters, rather than being bound to Zuffa during periods of forced inactivity (during which they did not get paid). Put differently, Zuffa restricted the demand for Fighter services, by restricting their opportunities to earn income (given that Fighters are paid for bouts only when they fight).

196. This evidence is corroborated by a case study of the UFC by Jesse Baker and Matthew Thomson, which notes that the UFC’s strategy of “limiting the number of avenues that

2014, available at <https://sports.yahoo.com/news/in-cutting-jake-shields--ufc-takes-a-page-out-of-nfl-s-playbook-203152661-mma.html> (In April 2014, Dana White states “We have 500 guys under contract, which is a lot more than we really need...”); ZFL-2699674 (In January 2015, Joe Silva writes to Ryan Hass “Don’t want too [sic] sign more guys. Have too many now[,]” and writes to Giberto Faria “Wat [sic] took [sic] many guys under contract.”); *id.* (In February 2015, Silva writes “I have a backlog of guys who need fights at the moment...” and “Right now people are lucky to get a fight at all.”).

480. Deposition of Joseph Silva at 257:8-15. *See also* ZFL-2206472 (Joe Silva states in November 2010 “With the WEC merger I have too many guys right now so openings are sparse.”); ZFL-2206527 (Joe Silva states in December 2010 “With the WEC merger have 70 fighters too many under contract. I have some guys who are going to be waiting 6 months for a fight.”); ZFL-2206534 (Joe Silva states in December 2010 “With the WEC merger I have 70 more contracts than I can really handle so my life is going to be miserable for a while.”).

481. *See* Silva Exh. 28 (explaining that Silva “would love to cut [fighter Rogerio Nogueira] but he would just end up fighting [former UFC champion] Rampage in Bellator.” Silva testified that cutting Nogueira “would just be handing [Bellator] something easy ... [a] [c]redible name.” Silva Dep. at 304:24-306:12. Zuffa elected not to cut Nogueira *Id.* at 307:4-7. Silva also admitted that if Nogueira had been matched against Rampage, this would “improve Bellator’s ability to put on a successful event.” Silva Dep. at 307:19-308:2.

482. Deposition of Kurt Otto, February 6, 2017, 116:4-25.

483. ZFL-2642993 (January 2008 email from the agent for Andrei Arlovsky, a former UFC Heavyweight Champion, stating that “It is extremely damaging to Andrei’s career to be shelved for such a long period of time [more than one year]”); *see also* ZFL-2699696 (text to Sean Shelby from Angela Hill (1301653003) on June 20, 2015 at 22:25, stating “Can you tell me if I’m going to be shelved again for 6 months? I’m really strapped for cash and need to figure something out if so.”).

young fighters could take to pursue careers in the sport of MMA seemed counter-intuitive, especially while simultaneously attempting to grow the organization.”⁴⁸⁴ In the absence of the Challenged Conduct, Zuffa’s ability to restrict Fighter career paths would have been curtailed, because these Fighters would have had more viable paths for pursuing their careers with other MMA promoters.

4. The Challenged Conduct Inflated the Price of Live MMA Events

197. As explained below, Zuffa has implemented substantial price increases over time, including a 24 percent PPV price hike between 2010 and 2015, a time period during which Zuffa’s foreclosure of the Relevant Input Market and Submarket increased significantly, and during which Zuffa acquired Strikeforce. In the absence of the Challenged Conduct, Zuffa’s ability to do so would have been curtailed.

198. Zuffa’s internal documents emphasize that the UFC has the “[t]op priced ticket in U.S. sports,” with average PPV prices increasing from an average of \$81 to more than \$250 from 2001 to 2009.⁴⁸⁵ Zuffa documents also indicate that UFC events were priced at a substantial premium relative to the NFL, NHL, WWE, and MLB.⁴⁸⁶ A 2012 presentation by The Raine Group explains that “Fans Pay More for UFC,”⁴⁸⁷ noting that “UFC events offer a premium consumer

484. Jesse Baker & Matthew Thomson, *The Ultimate Fighting Championships (UFC): The Evolution of a Sport*, in CASES IN MARKETING MANAGEMENT 114 (SAGE Publications, Kenneth E. Clow & Donald Baack, eds., 2011). *See also* ZFL-2499718 at 18 (November 2011 email from agent Leland Labarre on behalf of Josh Barnett to Sean Shelby and Michael Mersch at Zuffa indicating that Zuffa was able to suppress the number of events that Fighters would participate below what Fighters would otherwise prefer: “I am disappointed with the aggressiveness of your position. As you know, a fight every 4 months or so would be typical for MMA fighters, whose career primes are generally short. Conversely, a 4-fight deal with a 5-year exclusive term is unheard of. The interpretation you have provided is simply unreasonable.”).

485. *See* ZFL-2508548, at 567. Another document states that PPV event ticket prices increased from \$81 in 2001 to \$299 in 2009. *See* ZFL-2279086 at 94.

486. *See* ZFL-2508548, at 567; *see also* ZFL-1243128, at 35.

487. *See* ZFL-1544038 at 62.

experience,”⁴⁸⁸ and demonstrating that UFC’s average ticket price for major international live-sporting events differs substantially from other sports including NFL, FIFA, and Formula 1.⁴⁸⁹

199. One Zuffa document notes that “[p]rice increases for PPV transactions have also shown inelastic demand characteristics, even during the economic slowdown.”⁴⁹⁰ Zuffa’s market research indicates that demand was insensitive to price hikes.⁴⁹¹ A Raine Group document notes that a PPV price increase in 2015 “had no material impact on number of PPV buys.”⁴⁹²

200. Analysis by WME-IMG demonstrates that Zuffa has restricted the number of PPV events while substantially increasing PPV prices between 2010 and 2015. As seen in Figure 1, Zuffa’s foreclosure of the Relevant Input Market and Submarket has increased significantly over that time period, which also encompasses the Strikeforce acquisition.

201. According to a June 2016 presentation, Zuffa produced 15 PPV events, and sold 7.7 million residential PPV buys in 2010 (or roughly 513,000 buys per event), the year before the

488. *Id.*

489. *Id.*

490. October 2009 UFC Public Lender Presentation, ZFL-2279086 at 9; ZUF-00162329-382 at 43. At the deposition of Deutsche Bank’s corporate designee, Drew Goldman, Deutsche Bank testified that Zuffa provided Deutsche Bank with data demonstrating that price increases for “pay per view buys and that regardless of economic conditions, that [Zuffa has] been able to continue to increase pricing.” Goldman 30(b)(6) Tr. 119:9-121:6 (discussing October 2009 Confidential Information Memorandum, DB-ZUFFA-00056900, at -936). Zuffa was provided the opportunity to edit that statement and did not. See Goldman 30(b)(6) Tr. 132:8-24 (discussing handwritten edits to the October 2009 Confidential Information Memorandum, DB-ZUFFA-00043567, at 0572).

491. ZFL-2472830 at 1 (“Pay-Per-View Buys ... Tracking to be the 2nd ranked event of all-time despite price increase. HD market share does not appear to be impacted by price.”); ZFL-2530042 at 50 (June 2015 UFC Board Update Presentation: “\$5 price increase in the U.S., which was introduced with the January 3rd UFC 182 event, does not appear to have negatively impacted buy rates.”). *See also* ZFL-1063442 (“We are modeling \$5 SRP increases in 2015 and 2018. The \$5 increase in 2015 is long overdue as we haven’t raised prices since 2006. We are not particularly concerned with price sensitivity as we experimented with a one-time price increase with UFC 168 and still generated the highest buys of 2013); ZFL-1084185 – 10/9/13 Mulkey says “our research shows the market will bear [a price increase].”; ZFL-1056382 (02/21/15 Markup of financial statement and factual commentary by CFO John Mulkey. “On January 3 (UFC 182: Jones vs. Cormier) we introduced a \$5 price increase in the US which was met with little to no discernible pushback [and will remain]” (handwritten note)); ZFL-1073120 (“On January 3, [2015] UFC 182, Jones v. Cormier, we introduced a \$5 price increase in the U.S. which was met with little to no discernable pushback.”).

492. *See* RAINE0018791 at 802.

Strikeforce acquisition.⁴⁹³ In 2015, Zuffa produced only 13 PPV events, and sold 6.4 million residential PPV buys (or roughly 492,000 buys per event). Yet even though the *quantity* of PPV buys decreased (from 7.7 to 6.4 million residential PPV buys), Zuffa's residential PPV *revenue* increased over this period, from \$191 million in 2010⁴⁹⁴ to \$196 million in 2015.⁴⁹⁵ Therefore, from 2010 to 2015, Zuffa's residential PPV output declined by approximately 17 percent,⁴⁹⁶ while its revenue increased by about 2.6 percent,⁴⁹⁷ implying that Zuffa increased its average residential PPV price by about 24 percent⁴⁹⁸ over this same interval.

202. Zuffa therefore implemented a price hike of 24 percent to its residential PPV customers while restricting its output by 17 percent. In the absence of the Challenged Conduct, Zuffa's ability to implement these price increases above competitive levels would have been curtailed.

5. The Challenged Conduct Restricted Output of Live MMA Events

203. As explained immediately above, Zuffa has implemented a significant and profitable restriction in PPV output. The same WME-IMG presentation shows that Zuffa's supply of PPV events fell in each full year since 2010, from 15 to 16 events per year from 2010 to 2011, to only 12 to 13 events per year from 2012 to 2015.⁴⁹⁹ And because Zuffa was essentially the only

493. WME-ZUFFA-00001150 at *9 (In 2010, Zuffa averaged 514,000 residential PPV buys per event over 15 events, for a total of approximately 7.7 million residential PPV buys).

494. See ZFL-2603702 (recording residential PPV revenue of \$190.5 million in 2010).

495. WME-ZUFFA-00001150 at *22 (reporting \$196 million in residential PPV revenue for 2015).

496. Equal to $[6.4 \text{ million}] / [7.7 \text{ million}] - 1$.

497. Equal to $[196 \text{ million}] / [191 \text{ million}] - 1$.

498. Let Zuffa's 2010 residential PPV price and quantity be denoted P and Q , and denote Zuffa's 2010 residential PPV revenue as $P*Q = R$. In 2015, Zuffa's quantity is equal to $Q*(1 - 0.17)$, and its revenue is equal to $R*(1 + 0.026)$. Therefore, Zuffa's 2015 price is equal to $[R*(1.026)]/[Q*(0.83)] = [R/Q]*1.24 = [P]*1.24$.

499. WME-ZUFFA-00001150 at *9.

MMA promoter with PPV events over this timeframe (Bellator had a single PPV event in 2014),⁵⁰⁰ this means that the industry supply of PPV events was also restricted. In the absence of the Challenged Conduct, Zuffa's ability to restrict the output of PPV events in would have been curtailed.

204. In addition, as explained below, the Challenged Conduct has restricted the output of Live MMA Events generally since 2010, a time period encompassing both a large increase in Zuffa's foreclosure of the Relevant Input Market and Submarket, and Zuffa's acquisition of Strikeforce.⁵⁰¹ This has caused industry output of Live MMA Events to fall (both in absolute terms and relative to prior trends) because the output of Live MMA Events by non-Zuffa promoters has fallen off sharply, with Zuffa's supply of Live MMA Events not increasing by enough to make up for the difference. This indicates that the Challenged Conduct suppressed the output of other MMA promoters. In the absence of the Challenged Conduct, Zuffa's ability to restrict industry output would have been at least partially counteracted by other MMA promoters, who would have been less constrained.

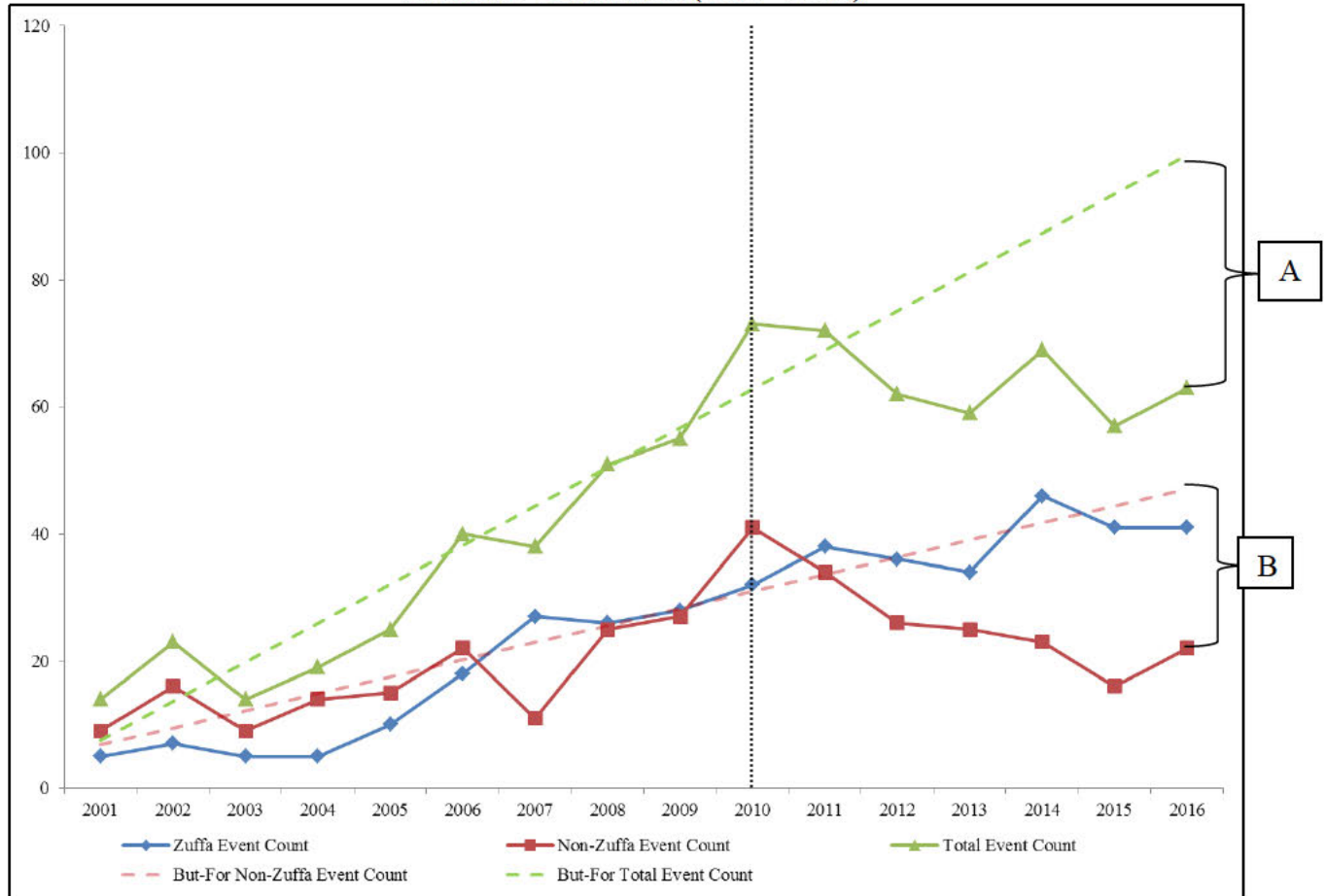
205. Figures 4A – 4C below plot Live MMA Events over time for (1) Zuffa; and (2) the non-Zuffa promoters encompassed by the Relevant Input Market and Submarket. In each of these Figures, the number of Zuffa events has increased over time, while the number of non-Zuffa events has decreased. Significantly, the total supply of Live MMA Events actually *declined* since 2010: Events produced by other MMA promoters have fallen off sharply, while Zuffa's supply of Live MMA Events have not increased sufficiently to make up for the difference.

500. See <https://www.bloodyelbow.com/2017/6/25/15870964/spike-executive-bellator-nyc-the-first-of-many-ppv-events-running-mma-news> (stating that Bellator's debut PPV event was in 2014; Bellator hosted its second-ever PPV event in June 2017).

501. See Figure 1, *supra*.

206. Figure 4A displays the supply of Live MMA Events by Zuffa and non-Zuffa promoters encompassed by the Tracked measure of the Relevant Input Market. (Figure 4A includes only events featuring at least one Tracked Fighter). The dashed lines in Figure 4A illustrate the path of other Live MMA Events and total Live MMA Events assuming, after 2010, they had grown at the same rate as they had previously. Had earlier (pre-2011) trends persisted, the supply of events would have increased substantially, relative to actual levels. This can be seen in the vertical distance (labeled “A”) between the projected total output and actual output as of 2016. This drop is driven primarily by the vertical distance labeled “B,” which gives the difference between projected non-Zuffa output and actual non-Zuffa output.

FIGURE 4A: SUPPLY OF LIVE MMA EVENTS BY ZUFFA AND NON-ZUFFA PROMOTERS
 “TRACKED” DEFINITION (2001 – 2016)

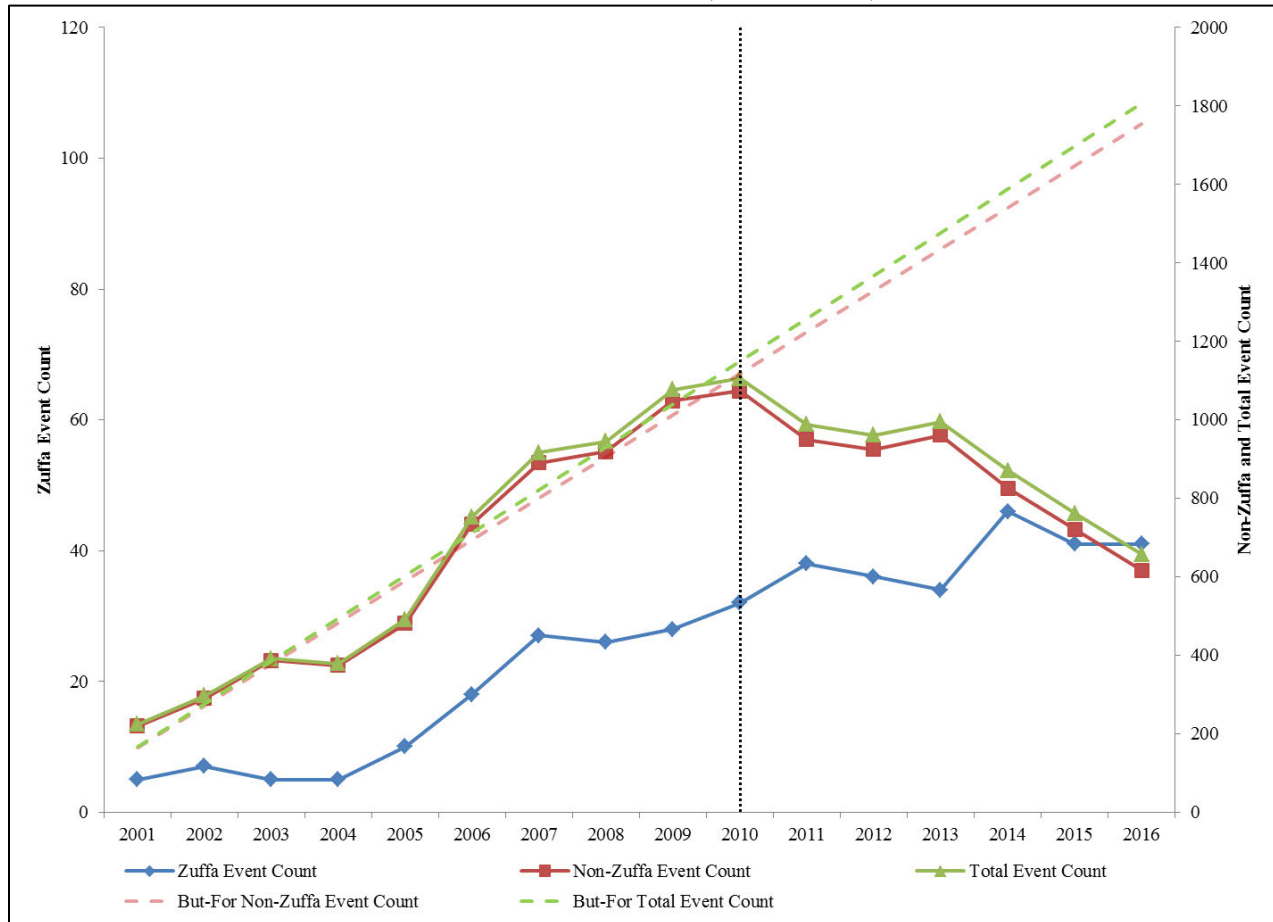


Note: Non-Zuffa Promoters include those encompassed by the Tracked definition of the Relevant Input Market. Only events featuring at least one Tracked Fighter are displayed.

207. Similar patterns are observed when the Ranked measure of the Relevant Input Market and Headliner Submarket are used. As seen below, regardless of how the markets are defined, total output of Live MMA Events since the Strikeforce acquisition has decreased, both relative to prior trends and in absolute terms. In each case, the decline is driven by a drop in non-Zuffa events, with Zuffa’s supply of Live MMA Events not increasing by enough to make up for the difference. (Figure 4B includes only events featuring at least one Ranked Fighter; Figure 4C includes only events featuring at least one Headliner).

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FIGURE 4B: SUPPLY OF LIVE MMA EVENTS BY ZUFFA AND NON-ZUFFA PROMOTERS
 “RANKED” DEFINITION (2001 – 2016)

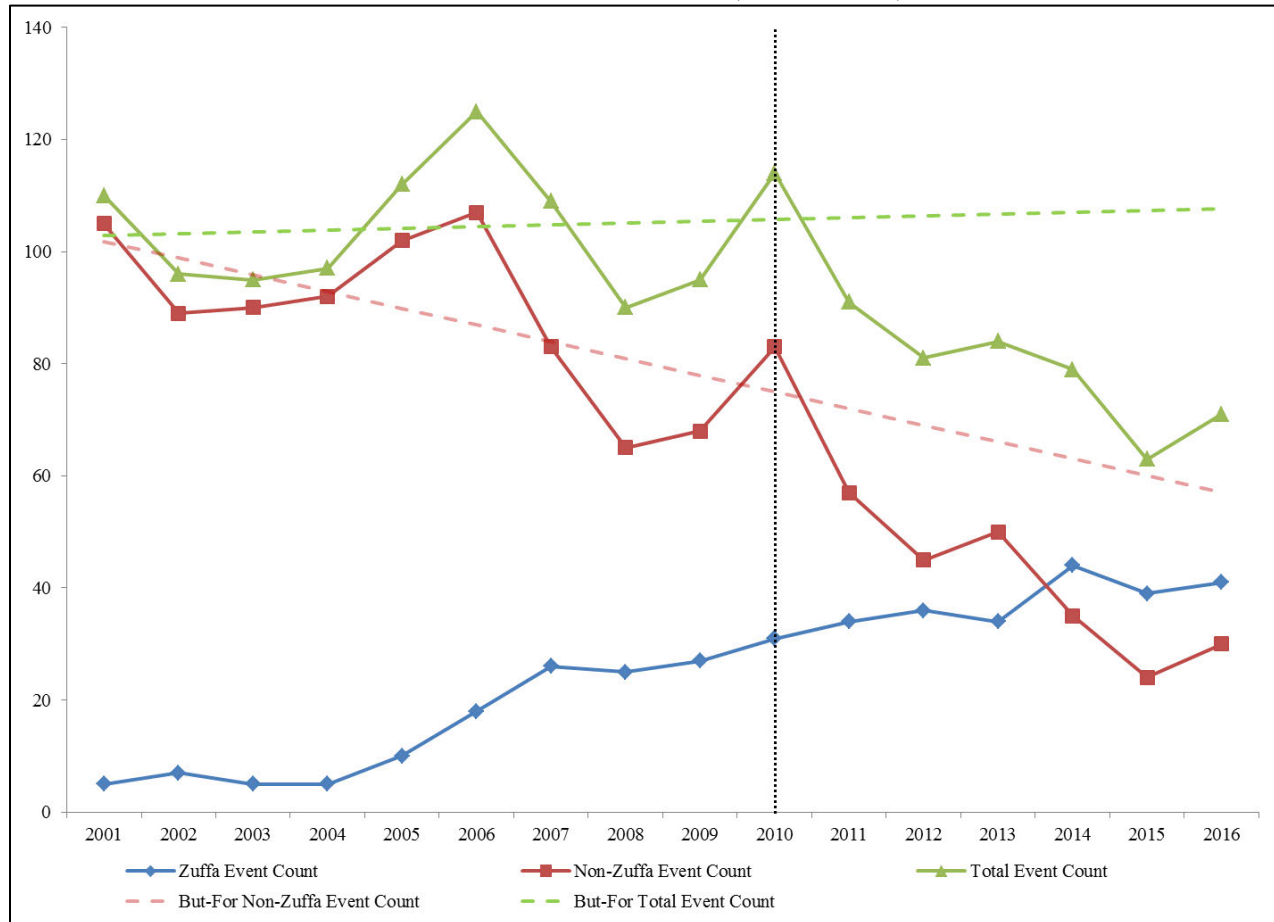


Note: Non-Zuffa Promoters include those encompassed by the Ranked definition of the Relevant Input Market. Only events featuring at least one Ranked Fighter are displayed.

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FILED UNDER SEAL

FIGURE 4C: SUPPLY OF LIVE MMA EVENTS BY ZUFFA AND NON-ZUFFA PROMOTERS
“HEADLINER” SUBMARKET (2001 – 2016)



Note: Non-Zuffa Promoters include those encompassed by the Headliner definition of the Relevant Input Market. Only events featuring at least one Headliner are displayed.

6. All Evidence and Analysis of Anticompetitive Effects Is Common to the Classes

208. All of the evidence of anticompetitive effects I have discussed in this report, and my analyses of that evidence, are common to the Classes as a whole. If I were asked to analyze anticompetitive effects for any single member of either Class, the evidence and analysis would be the same.

IV. COMMON IMPACT ON THE BOUT CLASS

209. In this section, I show that common impact can be demonstrated with respect to Bout Class Members using two separate, mutually reinforcing, methods. The first method is a standard, two-pronged, class-wide approach that has been accepted in prior antitrust litigation,

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including in *High-Tech Employee* and in *Arizona Travel Nurses*.⁵⁰² Under this method, the first prong involves a determination as to whether classwide evidence is capable of showing that the Challenged Conduct had a generally suppressive effect on compensation Zuffa paid to members of the Bout Class. The second prong of the first method involves determining whether there is class-wide evidence of a mechanism that would transmit the artificially reduced compensation (found by the first prong) broadly across the Class.

210. The second method—also successfully employed in antitrust class actions to demonstrate common impact—uses standard, class-wide econometric techniques to demonstrate that the vast majority of Class Members received lower compensation than they would have in the but-for world. Under this second method, my econometric model compares the compensation actually received by each Class member to the amount that he or she would have received in the but-for world. Using this information, I then compute what proportion of Class members were artificially undercompensated due to the Challenged Conduct. This method, like the first, has been accepted in prior antitrust litigation.⁵⁰³

A. The Challenged Conduct Suppressed Bout Class Compensation

211. As explained above, the Challenged Conduct substantially foreclosed rivals from key inputs necessary to compete effectively, including most importantly access to the top-ranked

502. I was the plaintiffs' economic expert in *Arizona Travel Nurses*. I have also served as expert for plaintiffs in other classes that have been certified based in part on my proof of common impact, including most recently *In Re Lidoderm Antitrust Litigation*. The district court accepted my methodology for proving antitrust impact in *Johnson v. Arizona Hospital & Healthcare Ass'n*, No. CV 07-1292-PHX-SRB, 2009 WL 5031334 (D. Ariz. 2009) at *8, 11. The same "two-step" methodology utilized in *Johnson* was accepted by the court in *In re High-Tech Employee Antitrust Litigation*, Case No. 11-CV-2509-LH, *Order Granting Plaintiffs' Supplemental Motion For Class Certification* (Oct. 24, 2013) at 53 ("Plaintiffs noted that Dr. Leamer's approach followed a roadmap widely accepted in antitrust class actions that uses evidence of general price effects plus evidence of a price structure to conclude that common evidence is capable of showing widespread harm to the class."). See also, e.g., *Johnson*, 2009 WL 5031334 at *8, 11 (finding predominance where conduct was alleged to suppress bill rates for nurses generally and evidence was presented that bill rates were correlated with nurse pay rates); Caves & Singer, *supra*, at 5.

503. See, e.g., *In re Air Cargo Shipping Servs. Antitrust Litig.*, No. 06-MD-1775 JG VVP, 2014 WL 7882100 (E.D.N.Y. Oct. 15, 2014).

Fighters. Because the Challenged Conduct impaired would-be rivals in their ability to compete, Zuffa exercised its market power over Fighters to a greater extent than it could have otherwise. In particular, the classwide regression analysis presented in Part III.D.1 above demonstrates that the Challenged Conduct reduced the share of Event Revenue Zuffa paid to the members of the Bout Class, thereby artificially reducing compensation to the Bout Class overall. The question for common impact is whether this effect was transmitted broadly across the Bout Class.

B. Common Evidence of a Compensation Structure Is Capable of Demonstrating That Compensation Suppression Was Broadly Experienced Across Bout Class Members

212. As explained below, Zuffa's compensation practices differed as between the bottom 80 percent of Fighters, whose pay was largely predetermined by fixed schedules, and those of the top 20 percent, whose compensation was partially determined by similar formulaic aspects to the bottom 80 percent, but also included components such as Letters of Agreement and PPV agreements. My analysis shows that both groups would have seen higher Event Compensation⁵⁰⁴ in the but-for world because Zuffa would have had to compete more aggressively against other MMA promoters to secure the services of all Fighters. In other words, but for the Challenged Conduct, more robust MMA rivals would have increased competition for all levels of Zuffa Fighters, not just some limited subset. Fighters in the bottom 80 percent would have enjoyed higher compensation through, at minimum, upward adjustments in Zuffa's standard compensation schedules. Fighters in the top 20 percent would also have benefitted from such adjustments to standard compensation schedules, and would also have benefitted further from increased bargaining leverage when determining the additional components of their compensation packages. As Scott Coker, former CEO of Strikeforce and current President of Bellator, explained in his

504. As explained in Part III.D.1, Event Compensation includes compensation from (1) show and win purses, (2) discretionary/performance pay, (3) PPV royalties, and (4) letters of agreement.

deposition, if Zuffa is the only viable alternative for Fighters (as he believed it would effectively be after Zuffa's acquisition of Strikeforce),⁵⁰⁵ the effect is to depress compensation generally:

[I]f there's only one place to have a job, and then, there's only a certain amount of slots available to have employment, the fighter purses naturally would go down because now you're in control of the marketplace. So now, *you can dictate what an entry [level] fighter would get and what a mid-tier fighter would get, what a top-tier fighter would get.* And you kind of control the marketplace at that point.⁵⁰⁶

This generalized suppression of compensation as the number and vitality of bidders for workers' services is reduced is just what is predicted by elementary economics, which shows that a monopsonist suppresses compensation to all of its labor inputs, just as a monopolist raises prices to all of its customers. Monopsony power is the mirror image of monopoly power;⁵⁰⁷ the harm to competition from monopsony is directly analogous to the harm from monopoly.⁵⁰⁸ A monopolist harms buyers by charging them a price above the competitive level; a monopsonist harms sellers by paying them a price below the competitive level.

213. Another mechanism transmitting suppressed compensation across all or almost all members of the Bout Class consists of a formulaic compensation structure, driven by observable common factors such as such as weight class, Fighter rank, gender, placement on the card, win/loss record, and so on, combined with (and mediated by) Zuffa's implementation and enforcement of the economic concept of "internal equity," under which Zuffa ensured that similarly situated

505. As explained above, Coker likened Strikeforce to "Luke Skywalker" and the UFC to "Darth Vader and the Death Star." Coker Exh. 8; Coker Dep. at 95:10-20.

506. Coker Dep. at 97:18-99:3 (emphasis added).

507. U.S. Department of Justice and Federal Trade Commission, *Horizontal Merger Guidelines* (2010) [hereafter *Merger Guidelines*], §1; §12. *See also* MODERN IO at 107-110.

508. MODERN IO at 107-110; *see also* *Merger Guidelines* §1 ("Enhancement of market power by buyers, sometimes called 'monopsony power,' has adverse effects comparable to enhancement of market power by sellers. The Agencies employ an analogous framework to analyze mergers between rival purchasers that may enhance their market power as buyers"). *See also* §12. *See also* *Johnson v. Ariz. Hosp. & Healthcare Ass'n (AzHHA)*, No. CV 07-1292-PHXSRB, 2009 WL 5031334 (D. Ariz. July 14, 2009); *Vogel v. Am. Soc'y of Appraisers*, 744 F.2d 598, 601 (7th Cir. 1984) (stating that monopoly and monopsony are "symmetrical distortions of competition") (quoted in *Weyerhaeuser Co. v. Ross-Simmons Hardwood Lumber Co.*, 549 U.S. 312, 322 (2007)).

Fighters received similar compensation, and that differences in compensation could be explained by known or knowable factors.

214. Internal equity—also referred to by economists as wage compression—is the notion that laborers doing comparable work believe that they should receive similar compensation. As a forthcoming article in the *Quarterly Journal of Economics* notes, “a long tradition in economic thought—as well as in psychology, sociology, and organizational behavior—has advanced the notion that individuals also care about their pay relative to that of their co-workers.”⁵⁰⁹ Because employees value internal equity, employers respond by implementing uniform compensation structures that pay comparable compensation for comparable work. One textbook explains that “[p]ay structure refers to the array of pay rates for different work or skills within a single organization,”⁵¹⁰ and refers to examples of pay structures at companies such as Merrill Lynch and Lockheed Martin.⁵¹¹ Payroll software companies offer advice to employers on achieving internal equity:

Internal equity is the comparison of positions within your business to ensure fair pay. You must pay employees fairly compared to coworkers. Employees must also perceive that they are paid fairly compared to their coworkers. Otherwise, they might feel undervalued and leave. It is easy for employees to find out how much other employees earn via the Internet and word of mouth. If an employee works hard but is paid less than her coworkers who do not work as hard, she might become upset about her wages. When you adopt a straightforward and honest payment system, your employees will believe that they are being paid fairly and with equality. This boosts company morale and employee loyalty, bringing many benefits in the long run....

509. Emily Breza, Supreet Kaur & Yogita Shamdasani, *The Morale Effects Of Pay Inequality*, QUARTERLY J. ECON. (forthcoming 2017), available at: <https://sites.google.com/view/ebreza/research>. See also Caves & Singer, *supra*; GEORGE MILKOVICH, JERRY NEWMAN & BARRY GERHART, COMPENSATION 69 (10th ed. McGraw-Hill 2011) (“Internal alignment, also called *internal equity*, refers to the pay relationships among different jobs/skills/competencies within a single organization.”) (emphasis in original).

510. Milkovich, et al., *supra*, at 69.

511. *Id.* at 69-73.

To create fair pay, you compare employees who do similar jobs for your company. You should consider the tasks your employees do. *If two employees perform similar tasks, they should earn similar wages.*⁵¹²

215. As explained below, there is substantial documentary evidence indicating that the compensation paid to Zuffa Fighters followed a formulaic compensation structure driven, in part, by considerations of internal equity. In addition, I provide econometric evidence indicating that approximately three-quarters of the variation in observed Fighter compensation (in absolute levels) is accounted for by observable common factors (as opposed to individualized factors). I also demonstrate empirically that individual Fighter compensation per event moves together with the per-event compensation paid to other Fighters, both within and across years. Put differently, the gains (or losses) in compensation are shared broadly across Class members.⁵¹³ This evidence demonstrates that Zuffa follows a compensation structure driven by considerations of internal equity, which implies that the compensation-suppressing effects of the Challenged Conduct were not confined to a subset of Class members, but instead were broadly shared across the Class.

1. Documentary Evidence of a Compensation Structure

216. Record evidence indicates that Zuffa's contracts specify formulaic schedules of show and win payments.⁵¹⁴ According to a 2010 UFC Due Diligence presentation, UFC compensation generally falls into different tiers, depending on the "ability and notoriety" of

512. Patriot Software, *Payroll Blog: Payroll Training, Tips, and News*, available at: <https://www.patriotsoftware.com/payroll/training/blog/what-is-internal-equity/> (emphasis added). See also Stacey Carroll, "Does Your Company Have Internal Pay Equity?" available at: <http://www.payscale.com/compensation-today/2009/03/importance-of-internal-pay-equity>

513. A similar approach was used to demonstrate a compensation structure in *High-Tech Employee*. See Caves & Singer, *supra*, at 5.

514. I review the forms of Fighter compensation paid by Zuffa, including show and win payments, in Part I.C above.

Fighters.⁵¹⁵ Fighters' show and win purses are nearly always identical to each other; the winner of a fight doubles his or her base pay.⁵¹⁶ A win in a prior bout typically entitles a Fighter to higher show and win purses in the next event, with the increase occurring in fixed increments, typically between \$2,000 and \$5,000. A loss in a prior bout typically does not lead to any guaranteed increase in the show and win purses payable in the next bout.⁵¹⁷ In his deposition, UFC's Joe Silva confirmed that "under our standard agreements a fighter only moves up in compensation if he wins. If a fighter does not win [and we] elect not to terminate the fighter his following bout stays at the same amount as previous fight."⁵¹⁸

217. The schedule of show and win purses depends on a Fighter's experience level and prior win/loss record. All else equal, a relatively obscure Fighter new to the UFC signing his or her first contract would be placed on a lower compensation schedule than a highly ranked Fighter with a record of winning in the UFC who has already fought pursuant to one or more Zuffa contracts.⁵¹⁹ For example, Aaron Simpson's first contract with Zuffa specifies show and win purses of \$7,000 each for his first bout, increasing in increments of \$2,000 with each win, up to a maximum of \$15,000.⁵²⁰ (This show/win schedule can be expressed as "7/7, 9/9, 11/11, 13/13, 15/15.")⁵²¹ Joe

515. ZFL-1382453 (noting that compensation "varies depending on ability and notoriety of Fighters. Generally Fighters are categorized into 3 tiers: a) Entry level - typically Fighters coming off The Ultimate Fighter Reality Show; b) Mid-tier level - emerging stars; c) Top-tier - proven stars who on certain occasions receive a portion of pay-per-view receipts").

516. *See, e.g.*, ZFL-0000003.xls (spreadsheet showing show and win purses).

517. *See, e.g.*, ZFL-0198252, 257 ("Fighter's Purse for the first Bout shall be Fifteen Thousand Dollars...If and only if Fighter is declared the winner of the first Bout, Fighter's purse for the second Bout shall be Seventeen Thousand Dollars....").

518. Silva Dep. at 341:11-20 ("Q. With respect to your question on how our compensation structure works, under our standard agreements a fighter only moves up in compensation if he wins. If a fighter does not win [and we] elect not to terminate the fighter his following bout stays at the same amount as previous fight? Do you see that? A. Yes. Q. That's accurate; right? A. Yes.").

519. *See, e.g.*, ZUF-00140700 ("Most any new fighter (not world ranked) at the lower weights will be coming into UFC at 6k+6k.").

520. *See* ZFL-0504268, 273-274 (contract signed 12/30/2008).

Silva confirmed the same structure in his deposition.⁵²² Plaintiff Nate Quarry signed a new Zuffa contract in 2008, after having won five out of six prior UFC bouts since 2005.⁵²³ That contract specifies show and win purses of \$25,000 each for the first bout of the contract, increasing in increments of \$5,000 with each win up to a maximum of \$50,000.⁵²⁴ (This compensation schedule can be expressed as “25/25, 30/30, 35/35, 40/40, 45/45, 50/50.”).⁵²⁵

218. Internal documents indicate that Zuffa management recognized the formulaic nature of the compensation schedules Zuffa used to design its Fighter contracts.⁵²⁶ In an internal email discussing Fighter pay, UFC matchmaker Sean Shelby wrote:

[G]oing forward please go up by 2's most all of the time for the Strikeforce events, especially for a guy like Conor [McGregor]. For reference we start the majority of guys coming in at 6+6 in UFC and always go up by 2's. To separate the challenger guys, top them out at 5 whenever possible. I get it if it ends up at 6K if signing a lot of fights for the Challengers. I say 5K to differentiate the two shows. I know it sounds like we are nickel and diming but it[']s for *the uniformity of it all* and makes it so much easier for everyone the more boilerplate it is at the mid to lower end.⁵²⁷

521. Simpson's contract superseded another contract signed just months earlier with (Zuffa-owned) WEC, which was governed an identical show/win schedule (7/7, 9/9, 11/11, 13/13 15/15). *See* ZFL-0504287 at 292-294 (contract signed 9/4/2008).

522. Silva Dep. at 338:24-339:14 (“Q. Okay. And the way the contracts were structured, is it fair to say that they're structured so that if a fighter wins they move to the next level in the contract? A. That's correct. Q. If they lose they stay at same level? A. That is accurate. Q. So a contract can have 10 and 10 and 12 and 12 and if fighter wins 10 and 10 they move to the 12 and 12? A. Correct if they lose 10 and 10 they stay at 10 and 10 for the next fight. A. Yes. Correct.”).

523. ZFL-0000003.xls (showing Quarry's win/loss record back to 2005).

524. ZFL-0003018, 022-024.

525. *See also* ZFL-0827347 (Correspondence among Zuffa management refers to a “new structure” governing compensation for the winner of The Ultimate Fighter (“TUF”) competition, described as “a 9 fight deal,” show/win compensation starting at \$17,000 and increasing in increments of \$2,000, and proposing “10 fights/50 months” for the “world title contract,” noting “[t]hat's a really good deal for us to have a world champ locked up for that long and is much more than fair...Under our new structure the winner of TUF gets a 9 fight deal at...17+17 19+19 21+21 23+23 25+25 27+27 29+29 31+31 33+33.”)

526. *See* ZFL-1908119 (“I don't think there should be a segmentation between the champion and runner-up on pay scale. They should all be 10/10, 12/12, etc. with the only difference being that we have the obligation to sign champion whereas we don't have to sign the runner-up. I have a hard time seeing why the champ would jump to 17/17, it's a gift that we are even signing him to UFC.”).

527. ZUF-00122280 at 80 (emphasis added). Note: Strikeforce Challengers was an MMA series produced by Strikeforce and Showtime to highlight upcoming Fighters. *See, e.g.*, <http://www.sherdog.com/news/news/Strikeforce-Challengers-20-Draws-143000-Viewers-on-Showtime-37424>

219. In his deposition, Mr. Shelby testified that when it comes to Fighter compensation, “you have to have some sort of uniformity.”⁵²⁸ As Mr. Shelby explained, that variation is also based on the relative ranking of Fighter’s skills as compared to each other, “so you ... have to have some sort of reason to have separation between the fighters.”⁵²⁹ He went on to explain that comparable Fighters are paid alike, stating that “[s]o if you see people in similar situations ... in the first or second contract they’re going to get compensated similarly....”⁵³⁰

220. As seen below, a January 2015 document titled “Minimum Fighter Pay”⁵³¹ displays a tiered show/win schedule for “Current (\$8k min).”

FIGURE 5: COMPENSATION STRUCTURE
FROM “MINIMUM FIGHTER PAY” DOCUMENT

Fighter Contracts		
	Current (\$8k min)	
First Contract	\$8,000	\$8,000
	\$10,000	\$10,000
	\$12,000	\$12,000
	\$14,000	\$14,000
Second Contract	\$17,000	\$17,000
	\$20,000	\$20,000
	\$23,000	\$23,000
	\$26,000	\$26,000
Third Contract	\$30,000	\$30,000
	\$35,000	\$35,000
	\$40,000	\$40,000
	\$45,000	\$45,000

221. According to the Minimum Fighter Pay document, between 85 and 90 percent of bouts in 2013-2014 involved compensation within the range given above (between \$8,000 and

528. Deposition of Sean Shelby, January 25, 2017, at 241:22-242:1.

529. *Id.* at 242:4-242:5.

530. *Id.* at 242:17-242:19. In addition, Zuffa engaged Mercer, a human resources consulting firm, to study its pay structure for Fighters and make recommendations on a framework for Fighter pay. *See* ZFL-1007379 (Mercer statement of work); ZFL-0557588 (Recap and Current Status Review showing timeline of project).

531. ZFL-0895314.

\$45,000).⁵³² Approximately 30 percent of bouts paid a show amount at the \$8,000 minimum, while approximately 75 percent had show pay at or below the \$26,000 maximum specified for the second contract above.⁵³³ The Minimum Fighter Pay document also models the effect of raising the minimum from \$8,000 to various levels (\$10,000, \$12,000, and \$14,000), and demonstrates how this hypothetical adjustment would ripple through the pay schedule.⁵³⁴

222. Zuffa's Vice President of Strategy, Denitza Batchvarova, prepared the Minimum Fighter Pay document in response to a request from Lorenzo Fertitta and Lawrence Epstein to examine the financial impact to Zuffa of raising the minimum-Fighter compensation. In her deposition, Ms. Batchvarova stated:⁵³⁵

Our contracts at the time were if you sign with UFC, you were at a minimum getting 8,000 to show and 8,000 to win, going up by 2. Which means if you win, your next fight is 10,000 to show, 10,000 to win. If you win, your next fight is at 12,000 to show, 12,000 to win. And your last bout under your contract would be 14,000 to show and 14,000 to win. So essentially the question Lorenzo and Lawrence asked me was, 'What would happen if we moved the very first tier of pay to be 10,000 to pay, 10,000 to win or 12,000 and 14,000?' So this analysis was attempting to show the full year impact of if we moved all—if, essentially, we started implementing that strategy going forward, so if we moved to 10, 10 minimum, yeah.⁵³⁶

Ms. Batchvarova testified that she estimated this compensation structure after conferring with Sean Shelby and Joe Silva, who were in charge of negotiating Fighter compensation for the “bottom 80%” of Fighters.⁵³⁷

223. Record evidence indicates that formulaic pay scale practices extended even to top performers. According to Ms. Batchvarova, factors determining compensation for the top 20 percent of Fighters included “current compensation,” what “other athletes on our roster ...are

532. ZFL-0895314, 315.

533. *Id.*

534. ZFL-0895314, 316-317.

535. Deposition of Denitza Batchvarova, January 25, 2017, at 37:8-19.

536. *Id.* at 38:11-39:1.

537. *Id.* at 40:9-11, 66:8-18.

getting paid;” and “how popular the athlete is;” this indicates that even the highest paid athletes were subject to structured compensation.⁵³⁸ After Roy Nelson’s manager turned down a contract offer in May 2013, Lorenzo Fertitta wrote “I offered 9 fights 125+50 for regular bout, 500 flat for title fight, 500 plus ppv if defending. If ppv does 600k buys he makes 1.1m. Very fair offer. I feel like if we counter the 125+50 we start to screw up the *pay scale for [championship] contenders[.]*”⁵³⁹

224. There is evidence that even discretionary bonus compensation was formulaic. A February 2015 presentation indicates that there were established ranges for bonuses depending on the outcome of the bout, whether or not the bout is a main event or a title challenge or defense.⁵⁴⁰ The same document clarifies that “[w]ith a few exceptions, discretionary bonuses are a significantly smaller part of the total compensation.”⁵⁴¹ Documentary evidence also indicates that the opportunity to earn a portion of PPV revenue was limited to defending champions.⁵⁴²

225. Record documents indicate that when Zuffa negotiated Fighter contracts, negotiations centered around the compensation of comparable Fighters based on weight class, number of prior bouts, record, and championships.⁵⁴³ Joe Silva testified that one of Zuffa’s goals in designing Fighter compensation is to “to make sure that comparable fighters with comparable

538. Batchvarova Dep. at 67:3-14.

539. ZFL-1897652 at 748 (emphasis added).

540. ZFL-0819451 at 54.

541. *Id.* at 53.

542. ZFL-1005485 (3/13/14 email from Sen Shelby to Silva, Fertitta, and Dana, noting “I can talk money all day but a PPV component as a challenger is a deal breaker.”).

543. *See, e.g.*, ZUF-00140642 (In May 2011, when an agent for one Fighter (Tiequan) sought to negotiate their contract, the negotiations centered around the contracts offered to other appropriate “benchmark” Fighters. Zuffa’s Sean Shelby pointed to another Fighter (Jose Aldo) who was champion in the same weight class and made equal (or less) purses at the same stage in his career); ZUF-00140700 (listing comparable Fighters and their compensation); ZFL-0997899 (12/5/2013 email from Long to Fertitta and Hendrick, copy to Epstein, discussing “Fighter Comps” for Glover Teixeira. “Please let me know if you want me to pull any additional fighter’s information for comparison.”).

records are getting paid comparable amounts;”⁵⁴⁴ Silva testified that he worked to “impose a sense of equity between the different fighters.”⁵⁴⁵

226. Given Zuffa’s formulaic compensation practices, it is unsurprising that a preliminary memorandum prepared for Zuffa by a law firm states that Fighter compensation levels move in tandem, regardless of where a Fighter falls in Zuffa’s compensation structure.⁵⁴⁶ As Chief UFC Matchmaker Joe Silva explained to one Fighter’s manager: “As I said, I have a pay structure. I cannot mess it up for 1 fighter. I have to justify that to all the other managers... It’s great if other people want to pay him more but that’s not how my business model works.”⁵⁴⁷ This is, in effect, a textbook case of a manager seeking to apply the concept of internal equity to a workforce.⁵⁴⁸

2. Econometric Evidence of a Compensation Structure

227. To determine what proportion of the variation in Bout Class compensation (above and beyond the average) is attributable to common factors, I performed a regression analysis that explains total Fighter compensation (in levels, as opposed to share of event revenues) using some of the same explanatory variables from my regression analysis in Part III.D.1 above. However, I exclude from this regression Fighter-specific performance variables from the FightMetric database (such as average strikes landed, average takedown attempts, and so on). The regression analysis

544. Silva Dep. at 372:22-373:18 (“Q. Right. And so you wanted to make sure that you did your best to try to make sure that comparable fighters with comparable records are getting paid comparable amounts; is that fair? A. Yeah, that was my goal. Q. And one of the reasons why you did that is because you had to justify everyone’s pay to everyone else, and if you ...were doing this poorly or inefficiently, you’d constantly have fighters demanding more money, they’d say, hey, wait, you paid this guy this much and that guy that much, and you wouldn’t be able to justify to them if -- if you hadn’t been doing this well; is that right? A. It would just seem unfair to give somebody something that somebody else, equally deserving, didn’t get. Q. And you attempted, at least in your mind, to be fair, to impose a sense of equity between the different fighters; correct? A. I did.”).

545. *Id.*

546. ZFL-1472077, 123 (“wherever a fighter falls in UFC’s compensation structure, he has experienced steady and substantial increases in compensation since 2005”). *See also* TPS-0043214, April 25, 2015 Correspondence between UFC Chief Matchmaker Joe Silva and Agent Monte Cox (“We are moving the minimum wage up to 10 [for show] +10 [for win] and anyone who is below it is getting bumped up.”).

547. ZUF-00296703-706.

548. Milkovich, et al., *supra*, at 69-73.

therefore relies upon common and objectively measurable factors only—such as weight class, rank, gender, placement on the card, year, country, and venue—to explain variation in observed Fighter compensation. The dependent variable is the natural log of a Fighter’s Event Compensation. The *R*-squared obtained from this regression is approximately 78 percent. Accordingly, over three-quarters of the observed variation in Fighter Compensation—above and beyond what can be explained by the sample average—is explained by common factors. This provides further evidence of a compensation structure determined by factors common to the Class as a whole. Given that those factors would likely be the same in the but for world, the same factors that determine relative differences in compensation between Fighters would remain, and thus a general increase in compensation in the but for world would likely affect all Class members. A rise in some corresponds to a rise in all, just as a reduction in some would result in a reduction in all, because the compensation structure interconnects the compensation of all or almost all Zuffa Fighters.

228. Next, I performed regressions to determine whether gains (or losses) in compensation are broadly shared across the Bout Class. Similar to analyses performed by the Plaintiffs’ expert economist in *High-Tech Employee*, these regressions measure the extent to which an increase in the compensation paid to Fighters overall is statistically associated with an increase in compensation for individual Fighters.⁵⁴⁹ Specifically, I estimated regressions in which the dependent variable was set equal to an individual Fighter’s annual compensation per event, and the independent variable was set equal to either: (1) the average compensation per event paid to all other Fighters in *that* year; or (2) the average compensation per event paid to all other Fighters in

549. See *Order Granting Plaintiffs’ Supplemental Motion for Class Certification, High-Tech Employee Antitrust Litig.*, No. 11-CV-02509 (N.D. Cal. Oct. 24, 2013), at 60-61. See also Caves & Singer, *supra*, at 5.

the *prior* year. Because the variables are measured annually, these regressions do not include the same set of control variables as the regressions reported in Part III.D.1 above (such as controls for Fighter performance within a bout, venue fixed effects, etc.). Instead, they include fixed effects by Fighter, which control for all individual-specific, time-invariant Fighter characteristics. The variable *Trend* is an annual time trend; this controls for secular trends over time that may be correlated with compensation.

229. The results of this analysis, shown in Table 7 below, confirm that a Fighter's annual compensation per event is statistically significantly associated with the per-event compensation paid to other Fighters during that same year. When a one-year lag of other Fighters' compensation per event is used instead, the coefficient is again highly statistically significant. Put differently, gains (or losses) in Fighter compensation are shared broadly across Class members both within and across years. In particular, a one percent increase in other Fighters' per-event compensation is associated with an increase in individual Fighter compensation of approximately 0.159 percent to 0.175 percent. These results confirm that individual Fighter compensation per event moves together with the per-event compensation paid to other Fighters, both within and across years, providing further evidence of a pricing structure and, accordingly, of common impact flowing from generalized compensation suppression.

TABLE 7: BOUT CLASS COMPENSATION STRUCTURE REGRESSIONS

Explanatory Variable	Dependent Variable: <i>ln(Annual Comp Per Event)</i>	
	(1)	(2)
<i>ln(Others' Annual Comp Per Event)</i>	0.175*** (2.01e-05)	n/a
<i>ln(Others' Annual Comp Per Event)</i> [1-yr lag]	n/a	0.159*** (0.000)
<i>Trend</i>	0.182*** (0.000)	0.170*** (0.000)
<i>Constant</i>	5.565*** (0.000)	5.935*** (0.000)
Fighter Fixed Effects?	Yes	Yes
Count of Fighter Fixed Effects	1,466	1,450
Observations	4,334	4,250
R-Squared	0.843	0.851

Notes: Robust *p*-values in parentheses. *** *p*<0.01, ** *p*<0.05, * *p*<0.1.

C. Standard Econometric Methods Further Demonstrate Directly That the Vast Majority of Bout Class Members Received Lower Compensation Than They Would Have In the But-For World

230. To provide further proof of classwide impact, I used standard econometric methods common to the Class as a whole to determine whether the vast majority of Bout Class Members received lower compensation than they would have in the absence of the Challenged Conduct. Specifically, I used the regression models from Part III.D.1 to predict the but-for compensation share for each Fighter in each event in the but-for world. I then compared the predicted but-for compensation share with the share of Event Revenue that the Fighter actually received in that event.

231. As seen below, the results of this analysis indicate that, due to the Challenged Conduct, 98.8 percent of Fighters were undercompensated in at least one event, relative to the but-for world. In addition, 98.1 percent of Fighters were undercompensated, due to the Challenged Conduct, on net—that is, the aggregate share of Event Revenue received by these Fighters across all events in the regression database was less than the aggregate share that they would have received in the absence of the Challenged Conduct. Similar results are obtained even if I assume that Zuffa would have imposed foreclosure shares of 20 percent in the but-for world (i.e., if Zuffa

were to foreclose competition to a far more limited degree absent the Challenged Conduct). Under either scenario, the vast majority of Class Members were undercompensated, relative to the but-for world.⁵⁵⁰

TABLE 8: SHARE OF BOUT CLASS MEMBERS UNDERCOMPENSATED

But-For Foreclosure Share	Share of Bout Class Fighters Undercompensated In At Least One Event	Share of Bout Class Fighters Undercompensated On Net
0%	98.8%	98.1%
20%	97.3%	96.3%

Note: This analysis conservatively utilizes the regression estimates from column (3) of Table 6 in Part III.D.1, corresponding to the Headliner market definition.

232. In summary, based on two independent methods, I conclude that all or almost all members of the Bout Class suffered antitrust injury as a result of the Challenged Conduct.⁵⁵¹

V. COMMON IMPACT ON IDENTITY CLASS

233. In this section, I show that common impact can be demonstrated for two subgroups of the Identity Class. The first (“Identity Subgroup One”) consists of those who received at least some sponsorship payments, video game payments, merchandise royalty payments, or athlete outfitting policy payments from Zuffa during the Class Period, according to Zuffa’s records. The second (“Identity Subgroup Two”) consists of all Fighters who executed a PAR during the Class Period, regardless of whether these Fighters received compensation for use of their Identity in the actual world according to the JD Edwards or Merchandise Royalty Accrual database.⁵⁵²

550. That a small percentage of a Fighters are not shown to have been undercompensated under this method does not imply that he or she was uninjured. As explained in the two-step method in Part IV.B, a generalized increase in compensation in the but-for world would have benefitted all or almost all Fighters.

551. Both methods of proving common impact to the Bout Class (the two-step method described in Part IV.B above, and the econometric method described here) reveal that all of the proposed representative plaintiffs for the Bout Class (namely, Cung Le, Jon Fitch, Brandon Vera, Luis Javier Vazquez, and Kyle Kingsbury) suffered impact in the form of artificially suppressed compensation due to the Challenged Conduct. *See* backup data.

552. My methods for proving common impact to the Identity Class reveal that the following proposed named plaintiffs for the Identity Class suffered impact in the form of artificially suppressed compensation due to the Challenged Conduct: Cung Le, Jon Fitch, Brandon Vera, Luis Javier Vazquez, Kyle Kingsbury, and Nate Quarry.

234. As explained below, I conclude that all or almost all of Identity Subgroup One suffered antitrust injury, based on the same, two-pronged method that was used to prove impact for the Bout Class. With respect to Identity Subgroup Two, I conclude that all or almost all of these Class members have suffered antitrust injury, because all or almost all of these Class members would have received at least nominal, one-time payment at the time that their PARs were executed as compensation for use of their Identity in the but-for world.

A. The Challenged Conduct Suppressed Identity Class Compensation

235. As explained above, Zuffa has reduced the share of revenue paid to Fighters over time. Further, Zuffa pays a significantly lower share of its revenues to its Fighters than Strikeforce or Bellator pay to theirs. Moreover, Zuffa unilaterally restricted Fighter compensation by imposing a new sponsorship tax, appropriating sponsorship revenue that Fighters had previously received directly from sponsors.⁵⁵³ In the but-for world, Zuffa's ability to restrict Fighter compensation in at least these three ways would have been curtailed, resulting in higher compensation for members of the Identity Class.

236. Quantifying the effect of the Challenged Conduct on the Identity Class is complicated by the fact that I do not have access to records of payments made directly from sponsors to Fighters, which means that I cannot quantify the extent to which such payments declined as Zuffa began to appropriate more sponsorship revenue for itself. As a result, my analyses of harm to Identity Class members are conservative. The data available to me are limited to payments in which Zuffa was an intermediary between the sponsor and the Fighter. Specifically, Zuffa's JD Edwards ("JDE") database reflects various line-item payments that Zuffa made to Fighters, including sponsorship payments, video game payments, merchandise royalty payments,

⁵⁵³. See Part III.D.2, *supra*.

and athlete outfitting policy payments (“JDE Identity Payments”).⁵⁵⁴ From the beginning of the Class Period until December 30, 2016 (the last date for which JDE data were produced by Zuffa), there are 820 Fighters who received at least some JDE Identity Payments, all of whom are members of Identity Subgroup One. I supplement the JDE Identify Payments data with the Merchandise Royalty Accrual data, which contains royalty accruals for Fighters with signed merchandising agreements with Zuffa. This brings the count of Fighters in Identity Subgroup One up to 826.⁵⁵⁵

237. For Identity Subgroup One, the effect of the Challenged Conduct can be conservatively quantified by applying the results of the regression analysis of the Bout Class from Part III.D.1 above. These results show that the Challenged Conduct suppressed Bout Class compensation by a statistically and economically significant amount. For example, the results imply that a ten percentage-point decrease in foreclosure would cause the average Fighter’s compensation to increase by about 27 percent.⁵⁵⁶ This estimate can also be applied to the Identity Class, because Zuffa’s foreclosure impaired other MMA promoters and their ability to provide competitive compensation alternatives to Fighters generally. Applied to Identity Subgroup One, this example implies that Fighters who received JDE Identity Payments or merchandise royalty accruals would see these payments increase by 27 percent, on average, in the but-for world. Regardless of the exact level of foreclosure that would have prevailed in the but-for world, the implied suppression in compensation for Identity Subgroup One is substantial.

554. The JDE data also include unrelated payments such as reimbursements for travel expenses, as well as bout-related payments such as show and win purses. For purposes of my analysis here, I restrict the JDE data to sponsorship payments, video game payments, merchandise royalty payments, and athlete outfitting policy payments.

555. See Appendix 2.

556. See Part III.D.1, *supra*.

238. With respect to Identity Subgroup Two, Zuffa recognized that Fighters were signing away certain Identity rights in perpetuity when they executed their PARs. A PAR signed by a Fighter generally gives Zuffa the “ [REDACTED]

239. To estimate the amount of this nominal payment, I relied on a Zuffa document that includes a schedule of nominal, one-time, formulaic recommended payments in exchange for the use of their Identity in the UFC Electronic Arts video game series.⁵⁵⁹ I understand that this document reflects payments that Zuffa offered to Fighters in exchange for Identity rights that Zuffa needed, but had neglected to acquire previously. According to the document, these payments were made according to a formulaic schedule by dividing Fighters into various tiers. The recommended payment ranges from \$2,500 to \$25,000 based on a Fighter's "rating," which included the following categories: "S, AAA, AA, A, B C, C-."⁵⁶⁰

557. [REDACTED]. *See also* ZFL-0506593, ZFL-0175016, ZFL-0132594, ZFL-0469456, and ZFL-0086231; ZFL-1690436-444 (Fighter IP Guidelines for Consumer Products; provides Zuffa's interpretation of what Identity rights are included in the PARs).

it is based the minimum nominal compensation that Fighters received from Zuffa in exchange for use of their Identity in the actual world, in the presence of the Challenged Conduct. In the but-for world with more competition, Fighters likely would have received more.

B. Mechanisms Exist to Transmit Compensation Suppression Broadly Across Identity Class Members

241. Record evidence confirms the existence of uniform compensation structures transmitting compensation suppression broadly across the Identity Class. Zuffa's documents indicate that—to the extent that members of the Identity Class were compensated at all—payments were governed by formulaic structures. As discussed in Section I.D, Fighters received three different kinds of compensation from Zuffa for the use of their identity: (1) merchandise royalty payments; (2) payments for participation in official sponsorship programs; and (3) video game payments. These payments followed formulaic structures.

242. With respect to merchandise royalty payments, the merchandising clauses in Fighter contracts applied to the vast majority of Fighters; Zuffa noted that “it’s important that the basic terms within the schedules of each agreement stay the same.”⁵⁶² Zuffa's Merchandise Rights Agreements specified fixed percentages for royalties (either “10/20” or “15/30”).⁵⁶³ A 2014

562. See ZUF-00374356 (“Currently close to 100 fighters (past, current and rookies) as well as Octagon Girls, Cut Men and Announcers are signed to merchandise agreement. Few might have some exclusion but for the most part all have the same terms.... Any past, present and future fighter (Ultimate Fighter Show) that has or will have a following in the UFC/Pride/WEC will be offered a contract to participate in the merchandise program. Because we’re signing many fighters, it’s important that the basic terms within the schedules of each agreement stay the same. The only things that might be negotiated are the articles to which the fighter could or wants to participate in. This is because fighter might be bringing exclusive deals that would preclude him to participate in specific categories.”). See also ZFL-2244834 (In January 2010, Mersch demands that Clay Guida sign Merchandise Agreement; “and that directive comes from Dana.” Guida’s agent replies: “We are glad to extend the relationship as well. Our counsel feels the merchandise agreement is a bit restrictive and has advised us against participating for the time being. If that changes, I will notify you immediately.” Mersch replies: “That’s not an option. We are willing to discuss the language but he needs to sign the Mersch agreement per Dana.”).

563. See ZFL-1690436 at 39 (Under a 10/20 agreement, “[t]he fighter earns a 10% royalty off of revenue or a 20% royalty off of wholesale.” Under a 15/30 agreement, “[t]he fighter earns a 15% royalty off of revenue or a 30% royalty off of wholesale.”).

summary indicates all Fighters included were in one of these two categories, receiving either 20 percent, or 30 percent royalties on “Fighter IP Sales.”⁵⁶⁴ For royalties from JAKKS action figures, the UFC projected paying a percentage of royalty revenues to Fighters grouped into “4 Levels: A+, A, B, C” with each level receiving a specified percentage of UFC licensing revenue.⁵⁶⁵

243. Zuffa also calculated components of its sponsorship compensation formulaically. In 2015, Zuffa created a rigid compensation structure for apparel sponsorships when it implemented its Athlete Outfitting Program. In internal correspondence, Zuffa executives stated that “we have decided to move towards *one pay scale for all weight classes*,” and Zuffa documents listed compensation figures for champions, Fighters of various ranks, and non-ranked Fighters.⁵⁶⁶ Under the original plan, the “athlete outfitting compensation [was] a tiered system based on each athlete’s ranking at the time of the weigh-in, irrespective of broadcast type and placement on the Fight Card.”⁵⁶⁷ Ultimately, Zuffa decided to categorize Fighters into compensation tiers “based on their tenure in the UFC”⁵⁶⁸ with “[t]enure to be defined as number of cumulative bouts performed in the UFC.”⁵⁶⁹ The result was a “compensation model” with fixed event compensation for each tier.⁵⁷⁰

564. ZFL-1049355. *See also* Batchvarova Dep. at 52:22-54:7 (“Q. Looking at the royalty on fighter IP sales, is it fair to say that every fighter for whom you had data either had a 20 percent royalty or a 30 percent royalty? ... A. Yeah, if that is what you guys determined, then, yes, that is the data that I had. It seems like it, yes.”).

565. “A+ level receives 30% of UFC licensing revenue; A Level receives 30% of UFC licensing revenue; B Level receives 20% of UFC licensing revenue; C Level receives 10% of UFC licensing revenue.” *See* ZFL-0472320 at 21-22; ZUF-00106610 (listing Fighters by rank).

566. ZFL-0887100 (emphasis added). (11/25/2014 email from Batchvarova to Cook and several others stating, “After speaking with Lorenzo, Lawrence, Joe Silva and Sean Shelby, we have decided to move towards one pay scale for all weight classes. Below is the revised pay scale... Champion: \$35,000; Ranked #1-#5: \$17,500; Ranked #6-#10: \$10,000; Ranked #11-#15: \$5000; Non-ranked: \$1,500”).

567. ZFL-0940372 at 93. *See also* Deposition of Denitza Batchvarova, January 25, 2017, 138:7-22; Pl. Ex. 111 at 37 (“The champion would receive \$40,000 per fight. The title challenger -- and this would be based on what their status was going into the bout -- would receive \$30,000 per fight. If you have 21 bouts or above, you would receive \$20,000. Sixteen to 20 bouts would be \$15,000. Eleven to 15 bouts would be \$10,000. Six to 10 bouts would be \$5,000. And one to five bouts, essentially starting into the UFC, would be \$2,500.”).

568. ZFL-1039853 at 58, 64; Batchvarova Dep. at 32:5-34:20 (“we came up with the methodology which is currently actually employed which is assigning by tenure, which is objective”).

569. *Id.*

570. *Id.*

When Josh Barnett requested credit for his prior Pride fights under this tenure system, Zuffa responded “we aren’t going to make exceptions for one fighter.”⁵⁷¹ Finally, as explained above, the schedules Zuffa used to compensate Fighters for use of their Identities in video games are also formulaic.

244. In summary, the Challenged Conduct suppressed compensation for both Identity Subgroups, and there exist mechanisms to transmit this suppression broadly across Class Members. Accordingly, all or almost all members of Identity Subgroup One and Two suffered antitrust injury as a result of the Challenged Conduct.

VI. AGGREGATE DAMAGES

245. Aggregate damages here are the sum of the underpayments by Zuffa across all Class Members, in each Class separately, during the Class Period attributable to the Challenged Conduct. In this section, I estimate aggregate damages to the Bout and Identity Classes. Aggregate damages to the Bout Class for the Class Period through June 30, 2017 are alternatively calculated, depending upon alternative factual underpinnings, at between \$811.2 million (on the low end) and \$1.6 billion (on the high end). Aggregate damages to the Identity Subgroup One are estimated at \$32.6 million from the beginning of the Class Period through June 30, 2017. Over the same time period, aggregate damages to Identity Subgroup Two are calculated at \$4.5 million.

246. It bears emphasis that, although Zuffa Fighters would earn higher compensation in the but-for world, not all Zuffa Fighters would necessarily be fighting for Zuffa in that newly competitive world. In the but-for world, other MMA promoters would have been able to attract more Fighters, would have earned higher revenue, and would have paid competitive compensation to those Fighters. Further, as shown in Part III.D.V above, output of Live MMA Events would

⁵⁷¹. ZFL-0979654.

expend in a but-for world absent the Challenged Conduct, which could generate more revenue with which to compensate Fighters. Accordingly, for this and other reasons,⁵⁷² damages should not be constrained by the contemporaneous revenue and profit earned by Zuffa in the actual world.⁵⁷³

A. Aggregate Damages Using Strikeforce and Bellator Benchmarks

247. As explained in Part III.D.1, the share of revenue paid to Fighters by other MMA promoters is an economically relevant benchmark for estimating but-for compensation. Data produced by Strikeforce for 2009 and 2010 indicates that Strikeforce paid approximately 63 percent of its revenue to Fighters over this timeframe.⁵⁷⁴ Data produced by Bellator for 2010 through 2015 indicates that Bellator paid approximately 44.7 percent of its revenue to Fighters over that timeframe.⁵⁷⁵ According to its own financials, Zuffa itself has paid approximately 19.5 percent of its Event Revenue to the Bout Class during the Class Period.⁵⁷⁶

248. As seen in Table 9 below, Zuffa's Event Revenue for the Class Period through June 30, 2017 comes to approximately \$3.22 billion. Using the Strikeforce benchmark, I estimate aggregate damages at $[\$3.22 \text{ billion}] \times [63.0\% - 19.5\%] = \1.4 billion . Using the Bellator benchmark, I estimate aggregate damages at $[\$3.22 \text{ billion}] \times [44.7\% - 19.5\%] = \811.2 million .

572. For example, Zuffa's owners sold the UFC in 2016 for \$4 billion, indicating that a rational firm would have been willing to borrow or raise capital in order to spend more on Fighters so as to grow a business that could one day sell for that amount of money. All of my damages estimates fall well below the \$4 billion acquisition price paid for Zuffa by WME-IMG.

573. Moreover, as explained in Part VII, Zuffa's profits appear to have been understated by Zuffa's accounting practices.

574. Calculated from ZFL-1472337, and ZFL-1472338.

575. Calculated from SBPCL00002101.

576. Calculated from ZFL-1514837, ZFL-1514870, ZFL-1514900, ZFL-1514933, ZFL-1514944, and ZFL-2764799. Due to limitations in the Strikeforce and Bellator data, I conservatively compare the share of total revenue that Strikeforce and Bellator paid to their Fighters, respectively, to the share of Event Revenue that Zuffa paid to its Fighters.

TABLE 9: AGGREGATE DAMAGES TO BOUT CLASS (MILLIONS)
THROUGH JUNE 30, 2017

Benchmark	Zuffa Event Revenue	Actual Fighter Share	But-For Fighter Share	Damages
Strikeforce Benchmark	\$3,215	19.5%	63.0%	\$1,399.64
Bellator Benchmark	\$3,215	19.5%	44.7%	\$811.23

Notes: Event Revenue includes PPV, broadcast, gate, and on-demand video revenues, as reported in Zuffa's financial documents. Zuffa's Event Revenue data are extrapolated for the first half of 2017.

B. Aggregate Damages Using Zuffa Foreclosure Regression Benchmark

249. As an alternative to the Strikeforce and Bellator benchmarks, I calculate damages using a third benchmark that does not rely on any information from other MMA promoters. Instead, the third benchmark is based on the statistical relationship between Zuffa's foreclosure share and its own Fighter Shares over time. To quantify this relationship, I estimated a regression model similar to that presented in Part III.D.1, except that all data points for Strikeforce prior to its acquisition by Zuffa are discarded from the regression model. I conservatively used the Ranked measure of the Relevant Input Market to calculate damages.

250. The aggregate damages estimates implied by the Zuffa foreclosure regression model are shown in Table 10. As seen below, aggregate damages for the Class Period through June 30, 2017 are estimated at \$894.3 million. These estimates assume conservatively that Zuffa's foreclosure share would fall to 30 percent in the but-for world (a level sufficient to cause anticompetitive effects), instead of falling to zero.

TABLE 10: AGGREGATE DAMAGES TO BOUT CLASS (MILLIONS) THROUGH JUNE 30, 2017
ZUFFA FORECLOSURE REGRESSION MODEL

Year	Zuffa Event Revenue	Actual Fighter Share	But-For Fighter Share	Damages
From Dec 16 2010	\$20.3	24.9%	46.8%	\$4.43
2011	\$408.9	19.4%	42.9%	\$96.1
2012	\$401.5	18.6%	47.9%	\$117.8
2013	\$482.2	20.3%	51.9%	\$152.4
2014	\$412.9	19.2%	46.1%	\$111.2
2015	\$490.5	19.5%	47.2%	\$135.8
2016	\$666.1	19.5%	47.2%	\$184.4
Through 6/30/2017 Est.	\$333.0	19.5%	47.2%	\$92.2
TOTAL	\$3,215.4	19.5%	47.3%	\$894.3

Notes: Event Revenue includes PPV, broadcast, gate, and on-demand video revenues, as reported in Zuffa's financial documents. Zuffa's Event Revenue data are extrapolated for the first half of 2017. Figures for 2010 truncated to conform to Class Period.

C. Aggregate Damages Using Impact Regression Model Benchmark

251. My fourth measure of aggregate damages uses the impact regression model presented in Part III.D.1. By using the Strikeforce observations before Strikeforce was acquired by Zuffa, this method generates a larger coefficient on the foreclosure share relative to the regression model presented above. As before, I conservatively used the Ranked measure of the Relevant Input Market to calculate damages.

252. The aggregate damages estimates implied by the impact regression model are shown in Table 11. As seen below, aggregate damages for the Class Period through June 30, 2017 are estimated at \$1.6 billion. These estimates assume conservatively that Zuffa's foreclosure share would fall to 30 percent in the but-for world, instead of falling to zero.

TABLE 11: AGGREGATE DAMAGES TO BOUT CLASS (MILLIONS) THROUGH JUNE 30, 2017
IMPACT REGRESSION MODEL

Year	Zuffa Event Revenue	Actual Fighter Share	But-For Fighter Share	Damages
From Dec 16 2010	\$20.3	24.9%	64.1%	\$7.96
2011	\$408.9	19.4%	61.5%	\$172.3
2012	\$401.5	18.6%	71.3%	\$211.6
2013	\$482.2	20.3%	77.1%	\$273.9
2014	\$412.9	19.2%	67.6%	\$199.8
2015	\$490.5	19.5%	68.6%	\$241.0
2016	\$666.1	19.5%	68.6%	\$327.3
Through 6/30/2017 Est.	\$333.0	19.5%	68.6%	\$163.7
TOTAL	\$3,215.4	19.5%	69.2%	\$1,597.6

Notes: Event Revenue includes PPV, broadcast, gate, and on-demand video revenues, as reported in Zuffa's financial documents. Zuffa's Event Revenue data are extrapolated for the first half of 2017. Figures for 2010 truncated to conform to Class Period.

D. Aggregate Damages to the Identity Class

253. To estimate aggregate damages to Identity Subgroup One, I used the results of the Zuffa foreclosure regression model in Table 10 above. To do so, I multiplied the actual JDE Identity Payments made by Zuffa to Fighters by the ratio of the but-for Fighter Share to the actual Fighter Share from the Zuffa foreclosure regression model. For example, in 2012, Zuffa's actual JDE Identity payments to Fighters came to \$2.38 million, as seen in Table 12 below. In that year, the actual Fighter Share was 18.6 percent, while the but-for Fighter Share is 47.9 percent, as seen in Table 10 above. The but-for payments to Identity Subgroup One are calculated as [$\$2.38 \text{ million}$] \times [$47.9/18.6$] = \$6.14 million. Aggregate damages for 2012 are [$\$6.14 \text{ million}$] – [$\2.38 million] = \$3.76 million.

254. As seen below, aggregate damages for the Class Period through June 30, 2017 total approximately \$32.6 million for Identity Subgroup One.

TABLE 12: AGGREGATE DAMAGES TO IDENTITY SUBGROUP ONE (MILLIONS)

Year	JDE Identity Payments	But-For Identity Payments	Damages
From Dec 16 2010	\$0.01	\$0.02	\$0.01
2011	\$0.32	\$0.70	\$0.38
2012	\$2.38	\$6.14	\$3.76
2013	\$0.89	\$2.27	\$1.38
2014	\$0.64	\$1.55	\$0.90
2015	\$4.87	\$11.80	\$6.92
2016	\$9.03	\$21.87	\$12.84
Through 6/30/2017 Est.	\$4.52	\$10.93	\$6.42
TOTAL	\$22.7	\$55.3	\$32.6

Notes: Payments for 2017 are extrapolated from 2016 figures. Figures for 2010 truncated to conform to Class Period.

255. I calculate the aggregate damages to Identity Subgroup Two by multiplying the estimated number of PARs executed from the beginning of the Class Period through June 30, 2017 by the minimal payment of \$2,500 discussed above. Based on production to date, there have been 1,196 PARs executed between the beginning of the Class Period and November 2015, the last date for which PARs have been produced. This represents an average of approximately 20 PARs per month. Extrapolating forward, I estimate that Zuffa's production would contain an additional 385 PARs if it extended until June 30, 2017, yielding a total of $1,196 + 385 = 1,581$ executed PARs. Using the nominal payment of \$2,500 discussed above, aggregate damages to Identity Subgroup Two from the start of the Class Period through June 30, 2017 are calculated at $[1,581 \times \$2,500] = \4.0 million. This estimate understates damages to Identity Subgroup Two: Zuffa was sometimes unable to produce an executed PAR covering a given Zuffa Fighter for a given Zuffa Live MMA Event, despite the fact that any Fighter appearing in a Zuffa Live MMA Event would have executed a PAR. These gaps in Zuffa's production occur approximately 13 percent of the time during the Class Period. If I correct my estimate to account for these missing PARs, then aggregate damages are estimated at $\$4.0 \text{ million} / [0.87] = \4.5 million.

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256. In summary, the combined aggregate damages for Identity Subgroup One and Two are estimated at \$37.2 million (equal to \$32.6 million from Subgroup One plus \$4.5 million from Subgroups Two, accounting for rounding). There is substantial overlap between the two Subgroups: Approximately 64 percent of the members of Identity Subgroup One are also members of Identity Subgroup Two, and approximately 67 percent of the members of Identity Subgroup Two are also members of Identity Subgroup One.

VII. ZUFFA'S LIKELY EFFICIENCY DEFENSES ARE UNAVAILING

257. The record includes efficiency defenses of some or all of the Challenged Conduct that Zuffa, or economists acting on its behalf, have proffered in past proceedings. These efficiency defenses include the following claims: (1) that the Challenged Conduct has increased MMA output;⁵⁷⁷ (2) that the Challenged Conduct incentivized investments promoting Live MMA Events generally and individual Fighters specifically;⁵⁷⁸ and, (3) that the Challenged Conduct has increased Fighter compensation.⁵⁷⁹ As explained below, the record evidence I have reviewed to date, and my own analyses, does not support Zuffa's prior claims that the Challenged Conduct has had any of these effects, and in fact, directly contradicts such claims.

258. Zuffa's efficiency defenses, like the claims made by owners in other professional sports leagues in the past, amount to the claim that Zuffa must be permitted to exercise monopoly

577. In a 2015 letter to the FTC, Zuffa attorney Nicholas Gaglio claims five efficiencies associated with multi-bout contracting, the first three of which can be summarized as the claim that multi-bout contracts increased MMA output. *See* Letter to Stuart Hirschfeld, FTC Northwest Regional Office, from Nicholas E.O. Gaglio, Axinn, Oct. 23, 2015, ZFL-1472063-76 [hereafter *Gaglio Letter*], at 063, claiming that multi-bout contracts:

- 1) Allow the UFC to establish a viable business and offer a new product;
- 2) Leads to higher MMA output by reducing transaction costs and delays inherent in planning and arranging bouts;
- 3) Enables the UFC to present competitive matches that fans demand;
- 4) Incents marketing investment in promotional platforms and individual athletes;
- 5) Increases athlete compensation and other benefits such as insurance.

578. *Id.*

579. *Id.*

and monopsony power for the good of the sport. But the evidence from other professional sports, and the extensive sports economics literature, indicate just the opposite: Elimination of the Challenged Conduct would likely benefit Fighters, consumers, and the MMA industry and sport generally.

A. Zuffa’s Claim That the Challenged Conduct Increased Output

259. As explained in Part III.C, the Challenged Conduct restricted output in both the Relevant Input Market and the Relevant Output Market. In contrast, Zuffa has claimed that output has expanded as a result of its exclusive multi-bout contracts and its horizontal acquisitions. Neither claim is supported by the evidence.

1. Zuffa’s Claim That Multi-Bout Contracts Increased Output

260. In a 2015 letter to the FTC, Zuffa claimed that “Zuffa’s success—and other promoters’ subsequent success that Zuffa has facilitated—would not have been feasible without multi-fight contracts.”⁵⁸⁰ Zuffa claims that the UFC used exclusive, multi-fight contracts, before its 2001 acquisition, are currently used by rival promoters such as Bellator, and “have been ubiquitous for over 15 years, during which MMA has transformed from an obscurity into an emerging sport.”⁵⁸¹ Thus, Zuffa argues, “[g]iven the expansion of Live MMA Events over the years, it is reasonable to suggest that multi-bout contracts have played an integral part of the nascent sport’s output expansion.”⁵⁸²

261. Zuffa’s claim that its own growth was facilitated by its long-term exclusive contracts is not an efficiency defense at all: Even if it were correct, Zuffa simply assumes that what is good for Zuffa is good for the sport as a whole. That is not antitrust analysis; Zuffa’s logic

580. *Gaglio Letter* at 064.

581. *Id.*

582. *Id.* at 065.

would excuse any antitrust defendant that has achieved dominance by harming competition. Moreover, and by contrast, my own analysis shows that the Challenged Conduct restricted the supply of Live MMA Events in the Relevant Output Market.⁵⁸³

262. Zuffa's claim that *other* MMA promoters have achieved success by mimicking the Challenged Conduct is contradicted by the evidence. Instead of achieving "success," other MMA promoters have consistently been impaired from competing effectively, driven out of business, been unable to prevent Zuffa from poaching top talent,⁵⁸⁴ been acquired by Zuffa, been confined to "feeder league" status, and so on.⁵⁸⁵

263. To the extent that other MMA promoters did engage (however unsuccessfully) in contracting practices similar to the Challenged Conduct, that would provide no economic justification for the Challenged Conduct. If anything, competitive options for Fighters, and competition generally, are even more restricted when all firms in the market commit to an exclusionary strategy. In addition, conduct can be innocuous when practiced by a firm without market power yet anticompetitive when practiced by a firm, like Zuffa, with market power.

264. Zuffa's straw-man defense of "multi-fight contracts,"⁵⁸⁶ also assumes incorrectly that the only alternative to the Challenged Conduct is contracting "done on a Live MMA Event-by-event basis."⁵⁸⁷ If Zuffa's contracts locked up Fighters for a significantly shorter period of time (such as 12 months as opposed to well over 36 months),⁵⁸⁸ and if free-agency without undue influence from Zuffa became a near certainty after 12 months, then the Fighter contracts could

583. See Parts III.D.5 and III.B.2, *supra*.

584. See Part II.C, *supra*.

585. *Id.*

586. *Gaglio Letter* at 064.

587. *Id.* at 067.

588. See Part III.B, *supra*.

well achieve the claimed “benefits” without as many anticompetitive effects. The controversy here is not the existence of multi-fight contracts *per se*, but instead whether the *degree* of the restrictions contained in Zuffa’s contracts (given Zuffa’s monopsony power), and the practices Zuffa uses to maintain its monopsony power, are sufficiently high so as to generate anticompetitive effects that outweigh any possible procompetitive benefits. My analysis shows that it is.⁵⁸⁹

265. Finally, Zuffa argues that multi-bout contracts “incentivize effort from the athlete, even if that effort could produce a ‘loss’ on their record.”⁵⁹⁰ In the presence of single-bout contracts, Zuffa claims, a Fighter would be inclined to “employ a defensive, ‘boring’ strategy (like ‘holding on’ with little movement) that damages fan interest in the athlete, the promotion, and the sport[.]”⁵⁹¹ But this makes little economic sense given that the contracts are nearly all one-way ratchets, offering Fighters no guarantee that they will not be cut after a single loss.⁵⁹²

266. To substantiate its claim that Zuffa’s one-sided, multi-bout contracts encourage risk taking, Zuffa offered an analysis of Dr. Roger Blair, a former Zuffa economist retained in connection to the FTC’s second investigation of Zuffa’s practices in 2015.⁵⁹³ According to Dr. Blair’s “UFC Cut Fighters Analysis,” between 2008 and 2015, “only” 20 percent of Fighters who lost their initial bout were released, and “only” half of those who lost their first two bouts got released.⁵⁹⁴ These data contradict, and do not support, Zuffa’s claims—a 20 to 50 percent chance of being released after a loss is arguably quite significant. Dr. Blair provides no evidence that a Fighter facing these odds would have the requisite job security to partake in strategies that,

589. See Part III.C, *supra*.

590. *Gaglio Letter, supra*, at 075.

591. *Id.*

592. See Part II.B, *supra*.

593. *Gaglio Letter, supra*, at 076, n.27 (citing UFC Cut Fighters Analysis, 2008-2015, prepared by Dr. Blair’s team).

594. *Id.* at 074.

according to Dr. Blair, would be incentivized by long-term contracts. Indeed, the share of fights ending in decisions, rather than by knockouts or submissions, has increased over time, from 25 to 30 percent from 2001 to 2007, to about 50 percent by 2010, where it has remained.⁵⁹⁵ This sharp increase in decisions suggests that, as Zuffa's monopsony power and foreclosure share has increased over time, UFC Fighters have become less willing to assume the risks of winning by knockout or submission, and more willing to settle for a (less exciting) decision. Thus, UFC Fighters have not been incentivized by the exclusionary provisions of their contracts to take significant risks, as claimed by Zuffa. Indeed, the increasing share of decisions suggests the opposite.

2. Zuffa's Claim That Its Horizontal Acquisitions Increased Output

267. Professor Rodney Fort, one of Zuffa's experts from the FTC's first investigation of Zuffa's practices in 2011, claimed that Zuffa's horizontal acquisitions of MMA promoters has increased MMA output because "the number of Zuffa events has continued to increase following Zuffa's acquisition of WEC, WFA, Pride, and Affliction."⁵⁹⁶ Dr. Andrew Dick, another of Zuffa's prior experts from the FTC's 2011 investigation, also pointed to increases in Zuffa's output over time as evidence of the acquisitions being procompetitive.⁵⁹⁷

268. That Zuffa's *own* output may have increased over time fails to demonstrate the Challenged Conduct increased MMA *industry* output. Any firm that monopolizes an industry through horizontal acquisitions (and/or other anticompetitive conduct) may find that its own output

595. See <https://twitter.com/MMAGraphs/status/887735294845497348/photo/1>

596. Declaration of Rodney D. Fort Submitted to the Federal Trade Commission on Behalf of Zuffa, LLC (December 1, 2011), ZFL-1212308 [hereafter *Fort Report*] at 330; see also 355 (showing the annual number of UFC PPV events from 2001 - 2010).

597. See Declaration of Andrew R. Dick, Ph.D., Submitted to the Federal Trade Commission on Behalf of Zuffa, LLC (December 1, 2011), ZFL-1212452 [hereafter *Dick Report*] at 472; see also 547-550 (identifying, from 2001 - 2010, the annual number of UFC PPV events, paid attendance at UFC PPV events, North American UFC PPV buys, and closed circuit locations for UFC PPV events).

has increased. From an antitrust perspective, however, the relevant question is whether *industry* output is higher or lower than it would have been in the absence of Challenged Conduct. Professor Fort also claimed that Zuffa's horizontal acquisitions allow Zuffa to "stage higher quality fights by leveraging a larger stable of fighters."⁵⁹⁸ Once again, this confuses conduct that is beneficial to Zuffa with conduct beneficial to the industry as a whole. Zuffa's ability to harm competition hinges on its ability to deny rivals access to the inputs necessary to stage high-quality fights, which leaves Zuffa as the only promoter capable of consistently staging high-quality fights.⁵⁹⁹ In any case, my analysis shows that the Challenged Conduct restricted the supply of Live MMA Events in the Relevant Output Market: The decline is driven by a drop in non-Zuffa events, with Zuffa's supply of Live MMA Events not increasing by enough to make up for the difference.⁶⁰⁰ For example, the supply of Fights featuring Headliners has declined significantly since the Strikeforce acquisition.⁶⁰¹

269. The claim that the Challenged Conduct is necessary to produce high-quality matchups also incorrectly assumes that two high-quality Fighters signed under different promoters cannot be matched against each other. But there is nothing that inherently prevents matchups between Fighters from different promoters. This is standard practice in boxing, and could occur in a more competitive MMA industry. In the current environment, Zuffa relies on the Challenged Conduct to maintain its dominant position, and thus Zuffa faces clear disincentives to avoid cross-promotional matchups, which might allow other MMA promoters to challenge its dominance. Tellingly, in a market in which Zuffa is not dominant (boxing), Zuffa revealed its willingness to

598. *Fort Report, supra*, at 331.

599. *See* Part III.B, *supra*.

600. *See* Part III.D.4, *supra*.

601. *Id.*

pursue a matchup with another promoter (albeit a non-MMA promoter), having agreed to co-promote the Conor McGregor vs. Floyd Mayweather boxing match. In other words, in a competitive marketplace, where no promoter is dominant, it is in the interest of each promoter to stage the most competitive bouts, even if that means matching Fighters from different promoters. That is not true in MMA today due to the Challenged Conduct, but would be true in the absence of that conduct.

B. Zuffa’s Claim That the Challenged Conduct Increased Fighter Compensation

270. As explained in Part III.C, the Challenged Conduct afforded Zuffa the power to substantially suppress compensation paid to its Fighters. In contrast, Zuffa’s experts have elsewhere claimed that Zuffa pays competitive compensation to Fighters. As explained below, these analyses do not support Zuffa’s claim.

1. Zuffa’s Claim That Increased Fighter Compensation Over Time Shows That Fighter Compensation Is Competitive

271. Dr. Dick has pointed to “steadily increased fighter compensation” over time as evidence that Fighter compensation is competitive.⁶⁰² Dr. Dick’s analysis is based on changes in the levels of Fighter compensation between 2005 and 2010 for Zuffa Fighters at the 25th, 50th, and 75th percentiles.⁶⁰³ For example, Dr. Dick’s data show Zuffa’s median Fighter compensation per event decreasing from approximately \$10,000 in 2001 to \$6,000 in 2005, then increasing to approximately \$22,500 by 2010.⁶⁰⁴ Similar patterns are observed for the 25th and 75th percentiles.⁶⁰⁵

602. *Dick Report, supra* at 493-494.

603. *Id.* at 568-570. Dr. Fort submitted identical analyses. *See* ZFL-1212308 at 348-350.

604. *Id.* at 569. The increases over time are more modest when Dr. Dick deflates his data using compensation indices from other sports, or using a BLS index of compensation for employees in arts, design, entertainment, sports, and media occupations.

605. *Id.* at 568, 570.

272. Dr. Dick's analysis fails to control for the fact that Zuffa's revenues—and Zuffa's revenues per Fighter—have increased very substantially over time. This means that Fighter productivity (or “marginal revenue product”) has increased, which would predict under competitive circumstances an even greater increase in Fighter compensation. Over the time period studied by Dr. Dick (2001-2010), Zuffa's Event Revenue per Fighter per event has increased by more than a factor of ten.⁶⁰⁶ Yet Dr. Dick's own data show that Fighter compensation has increased by significantly less than this over the same interval, by a factor of about two to three.⁶⁰⁷ Thus, Dr. Dick's own data indicate that Fighter compensation has failed to keep pace with increases in Fighter productivity, indicating that Zuffa has been able to exercise monopsony power over its Fighters over time. Moreover, the relevant question is not whether Fighter compensation has grown in the absolute sense, but rather whether Fighter compensation would have been higher (or lower) in the absence of the Challenged Conduct.⁶⁰⁸

273. My own regression does not suffer from these two flaws. *First*, my regression accounts for Zuffa's increasing revenues by measuring Fighter compensation as a percentage of revenue. *Second*, my regression controls for a host of other factors that may also influence Fighter compensation, unlike Dr. Dick's analysis, which allows me to identify (and isolate) the effect of the Challenged Conduct on Fighter compensation: My regression measures the effect of Zuffa's

606. According to Zuffa's financial documents, Zuffa's Event Revenue per Fighter per event increased from \$55,806 in 2001 to \$599,207 in 2010.

607. Dr. Dick's data show that Zuffa Fighter compensation at the 25th percentile increased from just over \$4,000 in 2001 to just under \$12,000 in 2010. Zuffa Fighter compensation at the 50th percentile increased from approximately \$10,000 in 2001 to approximately \$22,500 in 2010. Zuffa Fighter compensation at the 75th percentile increased from approximately \$20,000 in 2001 to approximately \$60,500 in 2010. *See* ZFL-1212452 at 568-570.

608. Scott Coker, former CEO of Strikeforce, testified that Fighters received significantly lower offers after Strikeforce was acquired. Coker testified that, after the Strikeforce acquisition “[a] lot of people were disappointed ... [b]ecause you know, I had managers call me and say: Now our purses are going to go down. Now there's only one buyer and it's not going to be good for MMA as an industry.” Coker Dep. 135:10-25. One year after the acquisition, managers were telling Coker that “offers are about 20 percent less than when you guys [Strikeforce] were here.” *Id.* 137:14-21.

foreclosure on Fighter compensation, all other things held constant, as opposed to simply tracking changes in compensation over time.⁶⁰⁹ This distinction is important because the relevant comparison is not between Fighter compensation at arbitrary points in time, but rather between what Fighters earned in the actual world and what they would have earned in the absence of the Challenged Conduct, under more competitive conditions.

2. Zuffa's Claim That Increased Fighter Compensation After Horizontal Acquisitions Shows That Fighter Compensation Is Competitive

274. Dr. Dick compares compensation paid to Fighters for WEC, Pride, and Strikeforce before and after Zuffa acquired these promoters, and finds that the *level* of compensation increased for most Fighters.⁶¹⁰ Dr. Dick claims that this is evidence that Challenged Conduct was procompetitive.⁶¹¹ Dr. Dick is wrong.

275. Dr. Dick's analysis fails to control for the fact that (due in part to the Challenged Conduct) non-Zuffa promoters earned revenues far below Zuffa's. As explained in Part III.D.1, the correct comparison is between the *share* of revenue that would-be rivals paid to their Fighters and the *share* of revenue received by Zuffa Fighters. The data show plainly that other MMA promoters paid a much higher share of their revenue to Fighters than did Zuffa, and my regression analysis yields the same result—after controlling for a host factors that may also influence Fighter compensation, unlike Dr. Dick's analysis.

609. See Part III.D.1, *supra*. Dr. Dick does present alternative analyses controlling for a small fraction of the control variables used in my own regression analysis. See *Dick Report*, *supra*, at 571-573 (showing compensation adjusted for the fighter's result in the current fight and his previous three fights, event type, indicators for knockout of the night, submission of the night, letter of agreement bonuses, and fighter fixed effects). In addition, none of Dr. Dick's analysis accounts for Zuffa's increasing revenue over time.

610. *Id.* at 495-500.

611. *Id.* at 501.

3. Zuffa's Claim That its Profit Data Show that MMA Fighter Compensation Was Competitive

276. In connection to the FTC's second investigation of Zuffa's practices in 2015, Dr. Blair attempts to demonstrate that Fighter compensation is substantial by reporting Fighter compensation as a proportion of Zuffa's profits, ranging from 38 percent to 70 percent between 2009 and 2014.⁶¹² But Fighters' share of revenue—not profit—is the economically relevant metric. Elementary economics shows that, under competitive conditions, Fighters will earn a share of revenue commensurate with their productivity.⁶¹³ No such relationship holds for profit: If a firm's profit is X percent of its revenue, and if the firm's labor costs come to Y percent of its revenue, comparing Y to X does not yield insight into whether or not workers' compensation is competitive. Zuffa's profits depend on *all* of its revenue streams and *all* of its costs. Profits could therefore fluctuate for myriad reasons unrelated to the Challenged Conduct—even as foreclosure squeezes Fighters' revenue share.

277. Further, accounting profits reflect multiple decisions by the Zuffa that are not directly related to Fighters, such as investment in other areas, management bonuses, substantial payouts to a handful of shareholders of the closely held private company, litigation costs, and other unrelated expenses. Zuffa's profits also appear to have been understated by Zuffa's accounting practices. Zuffa's purported "costs" include corporate jet expenses, bonuses, and management fees.⁶¹⁴ Such "costs" may actually reflect excess economic profit.⁶¹⁵ In addition, there is record

612. Roger Blair, "Presentation of Observations Based on MMA Data," ZFL-1470673, at 80-81.

613. See, e.g., ROY RUFFIN & PAUL GREGORY, PRINCIPLES OF MICROECONOMICS (Harper Collins 5th ed. 1993), at 331-336.

614. RAINE0018791 at 807-808 ("[A]ccounts for all private jets used by current shareholders: these costs are well-above what is required to operate the business and will not be a go forward expense under the new ownership... the majority of plane expense can be added back as these services are not necessary to operate the business... Supplemental bonus is not an ordinary business expense and has been structured based on current ownership. It is essentially an equity participation plan that allows for extraordinary bonuses given that the business is

evidence of an “historical lack of cost controls”⁶¹⁶ at Zuffa: A detailed review of Zuffa’s cost structure by investment bank Goldman Sachs identified “actionable cost savings...representing approximately 25% of the UFC’s addressable cost base,”⁶¹⁷ which were “expected to be recognized within 24 months.”⁶¹⁸ Again, although Zuffa’s accountants treated these items as costs, they may actually reflect excess economic profit. Thus, Dr. Blair’s profit analysis would be rendered unreliable by Zuffa’s accounting practices, even if it had a sound economic basis (which it does not).

278. Similarly, Professor Fort has argued on Zuffa’s behalf, based on data spanning 2006 to 2010, that “profits have not increased with Zuffa’s acquisition of the assets of other promoters.”⁶¹⁹ As noted above, Zuffa’s profits may fluctuate for reasons unrelated to the Challenged Conduct, and are likely understated due to Zuffa’s accounting practices. Even so, Zuffa’s financial data do not show what Professor Fort claims. Zuffa’s profits actually *increased* substantially over the timeframe analyzed by Dr. Fort: From 2006 to 2010, according to Zuffa’s own financial statements, EBITDA increased from \$77.1 million to \$169.1 million, while Zuffa’s net income increased from \$76.0 million to \$129.6 million.⁶²⁰

279. Professor Fort’s misleading claim is based on Zuffa’s profit margins (measured as a *percentage* of revenue), as opposed to its absolute dollar profits. This ignores elementary

primarily owned by two individuals and due to the high cash flow nature of the business. This will not be an expense as part of a new ownership.”).

615. Economic profit differs from accounting profit; the former is the difference between total revenue and total economic costs; the latter is the difference between total revenue and total accounting costs. *See, e.g.*, MICHAEL KATZ & HARVEY ROSEN, MICROECONOMICS 199-202 (Irwin McGraw-Hill 3rd ed. 1998).

616. *See* ZFL-2649918, at 965-966.

617. *Id.* The projected savings fall into two categories: “(1) cost savings due to the historical lack of cost controls given the prior family-run, entrepreneurial nature of operations and (2) synergies due to the significant overlap in front and back-office functions across the UFC and WME IMG.”

618. *Id.* at 987.

619. *Fort Report, supra*, at 325.

620. *See* ZFL-1381761 and ZFL-1514836, Zuffa’s consolidated profit and loss statements for 2006 and 2010. *See also* Appendix 2, which details all of Zuffa’s financial documents used in my analyses.

economics (and common sense), which teaches that firms seek to maximize dollar profit, not profit as a share of revenue.⁶²¹ A firm that earns \$1 million of profit on \$10 million in revenue has a profit margin of just 10 percent, yet that firm is obviously worth more than a firm that earns \$10,000 of profit on \$20,000 in revenue (earning a profit margin of 50 percent). According to Zuffa's financials, from 2006 to 2010, Zuffa's revenues increased from \$181.5 million to \$445.8 million, while its profit as a percentage of revenue remained roughly constant, resulting in a large increase in Zuffa's total profit.

280. More generally, the notion of a purported lack of profitability is flatly contradicted by the facts. As explained above, UFC was purchased for \$2 million in 2001 and sold for about \$4 billion in 2016.⁶²² By any reasonable metric, this represents an extremely high return on investment. Contemporaneous financial analysis confirms that third parties considered Zuffa to be highly profitable: In 2010, Moody's increased Zuffa's rating outlook to "Positive" from "Stable," citing "Zuffa's continued strong revenue and EBITDA growth trends worldwide."⁶²³ Analysis by WME-IMG from mid-2016, just prior WME-IMG's acquisition of Zuffa, characterizes Zuffa as an "Attractive Acquisition Target with Strong Financial Profile,"⁶²⁴ noting that Zuffa delivers "[c]onsistent and strong top-line growth,"⁶²⁵ and is "[c]onsistently highly cash generative."⁶²⁶

621. See, e.g., MICHAEL KATZ & HARVEY ROSEN, MICROECONOMICS 207-217 (Irwin McGraw-Hill 3rd ed. 1998).

622. See Part I.A, *supra*.

623. Moody's Investors Service, "Announcement: Moody's Changed Zuffa LLC's (d/b/a Ultimate Fighting Championship or UFC) Rating Outlook to Positive from Stable," (December 1, 2010), *available at* https://www.moodys.com/research/Moodys-Changed-Zuffa-LLCs-dba-Ultimate-Fighting-Championship-or-UFC--PR_210184 ("The rating outlook change is prompted by Zuffa's continued strong revenue and EBITDA growth trends worldwide").

624. WME-ZUFFA-00001150 at *5.

625. *Id.*

626. *Id.*

WME-IMG clearly viewed Zuffa as an attractive acquisition target, as the \$4 billion dollar sales price confirms.

C. Zuffa’s Claim That The Challenged Conduct Incentivizes Investment in Promotional Platforms and Individual Athletes

281. As explained in Part III above, the Challenged Conduct suppressed competition, and allowed Zuffa to exercise monopsony power. As economists and antitrust authorities recognize, competition creates incentives for firms to invest, while the absence of competition can harm investment incentives.⁶²⁷ In addition, as explained in Part VII.D below, evidence from professional sports leagues rejects the hypothesis that employers must wield monopsony power over athletes in order to incentivize investment decisions that ultimately benefit the industry as a whole. In contrast, Zuffa (parroting past arguments made by owners in other professional sports leagues) has claimed that elimination of the Challenged Conduct would remove incentives for competitive investment decisions. As explained below, these claims are unpersuasive.

282. In its 2015 letter to the FTC, Zuffa argues that its multi-fight exclusive contacts enabled the UFC to “promote its events and athletes more than it would have done if athletes were contracted on a one-fight basis,” and “prevent free riding on UFC’s promotional efforts.”⁶²⁸ To substantiate this claim, Zuffa asserts that it takes 16 months to “Go To Market” for event

627. For example, when analyzing the potential for anticompetitive effects of a proposed merger, the antitrust agencies’ *Horizontal Merger Guidelines* recognize that anticompetitive mergers may induce firms to reduce investment in capacity, or even to disinvest in pre-existing production capabilities. *Merger Guidelines*, *supra*, §6.3. The *Guidelines* also state that “[e]xplicit or implicit evidence that the merging parties intend to raise prices, reduce output or capacity, reduce product quality or variety, withdraw products or delay their introduction, or curtail research and development efforts after the merger, or explicit or implicit evidence that the ability to engage in such conduct motivated the merger, can be highly informative in evaluating the likely effects of a merger.” *Id.* §2.2.1. *See also* Jonathan Baker, *Beyond Schumpeter vs. Arrow: How Antitrust Fosters Innovation*, 74 ANTITRUST L.J. 575-602, 577 (2007).

628. *Gaglio Letter*, *supra*, at 071.

planning;⁶²⁹ if Fighters were not under exclusive multi-fight contracts, Zuffa argues, UFC would be unable to build its events via promotion, as negotiations with 22-26 athletes afresh would undermine planning. As before, Zuffa is attacking a one-fight-contract straw-man; the but-for world could accommodate multi-bout contracts of a much shorter (and more definite) duration.

283. More fundamentally, in a competitive market for Fighter services, Zuffa (or any other MMA promoter) would secure the services of Fighters not by binding them to exclusive multi-bout contracts, but by offering competitive compensation, giving the Fighters clear economic incentives to commit to participating in future bouts, regardless of contract duration.⁶³⁰ Even if a contract were to expire before the event, so long as the Fighter's pay was contingent on participating in the event, and so long as the compensation was competitive, the Fighter would have every incentive to show up for and compete vigorously at the event. Thus, in the but-for world, Zuffa's "Go To Market" event planning could be disrupted only if Zuffa offered below-market compensation, giving other MMA promoters an opportunity to offer Fighters alternative bouts with compensation more commensurate with their human capital. This is precisely how the competitive process is supposed to work. Moreover, if Zuffa offered to co-promote, it would not have had a similar claimed need to have a ready stable of available Fighters.

284. Zuffa's letter argues that "Without the ability to identify the fighters on the UFC roster, [television] distributors would pay the UFC less, which would in turn have less to share with its athletes."⁶³¹ This is pure conjecture, without any basis in evidence or economic theory. Television distributors are interested in Zuffa producing high-quality events that will attract viewers. The precise identities of Zuffa's roster of Fighters in (say) seven years (or whatever the

629. *Id.*

630. *See* Part III.D, *infra*.

631. *Gaglio Letter*, *supra* at 073.

length of the typical television contract) cannot be known, and in any event, is less critical than Zuffa's offering generic, top-ranked Fighters who are competitive matched and effectively promoted. Again, in a competitive equilibrium, Zuffa could secure the services of top-ranked Fighters provided that it offers competitive compensation, and also through co-promotion.

285. The duration of a television contract can easily exceed the average length of a Zuffa Fighter contract or a Fighter's career. For example, Zuffa's 2011 broadcast agreement with Fox spans seven years.⁶³² That Zuffa was able to negotiate such an agreement confirms that multi-year television distribution agreements do not require that Zuffa specify the identities of the Fighters to be featured in all future broadcasts over the life of the contract. Indeed, the Fox agreement calls for "high caliber" events without specifying the identities of all participants.⁶³³

D. The Experience of Other Professional Sports Leagues and the Sports Economics Literature Suggests That Elimination of the Challenged Conduct Would Benefit Fighters, Consumers, and the MMA Industry As a Whole

286. Although there is little question that the demand for professional Live MMA Events has expanded significantly in recent years, I have seen no persuasive evidence that the Challenged Conduct was necessary to facilitate this expansion, or that eliminating the Challenged Conduct would somehow impair the development of the industry. To the contrary, the experience of other professional sports leagues suggests that cessation of the Challenged Conduct would enhance competition and benefit the industry as a whole.

287. Before free agency was introduced in other professional sports leagues, it was sometimes argued by sports leagues that it was necessary to exercise monopsony power over

632. ZFL-1387999 (2011 Fox Agreement spanning January 1, 2012 through December 31, 2018).

633. *Id.* ("At a minimum, the quality of (i) the Fight Card for UFC Live on FBC fights shall be of a high caliber that is commensurate with broadcast television sporting events, and (ii) the Fight Card for all other Live Fight Events (as defined below) shall be equal to or better than the average quality of the Fight Cards for UFC fights telecast on SpikeTV and Versus in 2011.").

athletes in order to ensure “competitive balance” (a commonly used measure of fan welfare).⁶³⁴ The claim was that free agency would be harmful to fans and the industry overall, with talent flowing disproportionately to a small number of dominant teams. Yet the introduction of free agency to one professional sport after another has not had this effect.⁶³⁵ As Stanford sports economist Roger Noll has observed:

The [Leagues’] argument amounts to the claim that collusion by teams in sports leagues is justified because it is efficient and improves the welfare of consumers. This line of argument is rejected by virtually all economic studies of professional sports....[T]he assignment of ownership of an asset (here, a player’s human capital) will not affect the ultimate allocation of that asset in a competitive market... Thus, there is no basis for the claim that anticompetitive restrictions in the player market enhance efficiency....⁶³⁶

288. Given that MMA is not a team sport, it unsurprising that Zuffa has not claimed that its conduct can be justified by concerns of competitive balance. Nevertheless, Zuffa’s efficiency justifications, like those of professional sports leagues in the past, are premised on the notion that incentives to invest appropriately in Fighter services, and in promoting the bouts valued most highly by fans, are contingent on imposing restraints on athletes. Zuffa is wrong today for similar reasons that other sports leagues were wrong in the past: The reason that anticompetitive restraints on the market for athletes services cannot be justified in terms of economic efficiency is that, in a competitive market for athlete services, each athlete’s “human capital” will flow to its highest-valued use.⁶³⁷ In a competitive market, MMA promoters would compete for talent by assembling

634. See, e.g., Brad R. Humphreys, *Alternative Measures of Competitive Balance in Sports Leagues*, J. SPORTS ECON. 133-148 (2002).

635. Roger Noll, *Buyer Power and Economic Policy*, 72 ANTITRUST L.J. 615-616 (2005).

636. *Id.* Professor Fort himself reaches a similar conclusion in his sports economics textbook. RODNEY D. FORT, *SPORTS ECONOMICS* 267 (Prentice Hall 3rd ed. 2011). See also JAMES QUIRK & RODNEY D. FORT, *PAY DIRT: THE BUSINESS OF PROFESSIONAL TEAM SPORTS* 240 (Princeton University Press 1992).

637. See Noll, *supra*, at 616; see also Simon Rottenberg, *The Baseball Players’ Labor Market*, 64(3) J. POL. ECON. 242-258 (1956); Quirk & Fort, *supra*; Mohamed El-Hodiri & James Quirk, *An Economic Model of a Professional Sports League*, 79 J. POL. ECON. 1302 (1971); Roger G. Noll, *Professional Basketball: Economic and Business Perspectives*, in *THE BUSINESS OF PROFESSIONAL SPORTS* 18 (Paul D. Staudohar & James A. Mangan eds.,

the highest compensation and benefits and the highest-valued matchups (including a willingness to co-promote). Fighters would offer their services to the MMA promoter that offers the most favorable compensation commensurate with their productivity (their marginal revenue product). This would derive from MMA promoters' deploying Fighters' human capital to its highest-valued use (that is, the matchups valued highest by fans).

289. Far from harming the sport, the increased competition that would prevail in the but-for world would be expected to benefit the industry. Sports economists—including Professor Fort—recognize that fans are harmed when sports leagues exercise market power through coordinated behavior; “fans pay more for less in the presence of market power.”⁶³⁸ As Professor Fort concludes in an article appearing in *The Economics of Sports*,

Almost all economists see the ultimate culprit [for rising ticket prices and other trends harmful to fans] as market power, which derives from the special legal treatment of leagues. The outcomes are exclusive franchise rights for teams, management of sports leagues as cartels, and a complete stifling of any competing leagues, precisely those indicated by the basic economic theory of market power.⁶³⁹

290. Through the Challenged Conduct, Zuffa has achieved results analogous to cartelization of the MMA industry, without even the mitigating factor of having various teams within the UFC competitively bidding on athlete services as other sports leagues have. Another important distinction between Zuffa and certain other sports leagues is that Zuffa does not enjoy special immunity from antitrust enforcement. Fighters, fans, and the industry as a whole would be

1991); Daniel Sutter & Stephen Winkler, *NCAA Scholarship Limits and Competitive Balance in College Football*, 3 J. SPORTS ECON. 16 (2003).

638. Fort, *supra*, at 409 (“From the fans’ perspective, market power has the general tendency to reduce output and increase price...fans pay more for less in the presence of market power.”). See also ZFL-1212308 at 11-12; see also MICHAEL LEEDS, & PETER VON ALLMEN, *THE ECONOMICS OF SPORTS* 111 (Boston Addison Wesley 2002); see also Roger Noll, *The Economics of Baseball Contraction* 4 J. SPORTS ECON. 383 (2003); see also JAMES QUIRK & RODNEY D. FORT, *HARD BALL: THE ABUSE OF POWER IN PRO TEAM SPORTS* 9 (Princeton University Press 1999).

639. Rodney D. Fort, *Market Power in Pro Sports: Problems and Solutions*, in *THE ECONOMICS OF SPORTS* 8 (ed. WILLIAM S. KERN, W. E. Upjohn Institute for Employment Research 2000).

expected to benefit from removal of the Challenged Conduct and the introduction of increased competition through antitrust enforcement.

CONCLUSION

291. Since at least the beginning of the Class Period, Zuffa has possessed significant monopoly and monopsony power and, through the Challenged Conduct, has substantially foreclosed competition and generated significant anticompetitive effects. As a result, Zuffa has been able to compensate members of each Class below levels that would have prevailed in the absence of the Challenged Conduct, and this injury was widespread across the members of each Class. Aggregate damages to the Bout Class for the Class Period through June 30, 2017 are estimated, depending upon alternative factual underpinnings, at between \$811.2 million and \$1.6 billion. Over the same time period, aggregate damages to the Identity Class are estimated at \$37.2 million. The potential procompetitive justifications for the Challenged Conduct that Zuffa or economists acting on its behalf have asserted in prior proceedings are unavailing. The evidence from other professional sports, and the sports economics literature, as well as my own analysis, indicates that elimination of the Challenged Conduct would likely benefit Fighters, consumers, and the MMA industry generally. Finally, each prong of my analysis involves methods data, and evidence common to all Class Members. If I were asked to perform the same analysis for any single member of either Class, the evidence and analysis would be the same.

* * *



Hal J. Singer

Executed on August 31, 2017.

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APPENDIX 1: CURRICULUM VITAE

Office Address

Economists Incorporated
2121 K Street, NW
Suite 1100
Washington, DC 20037
Phone: [REDACTED]
singer.h@ei.com

Education

Ph.D., The John Hopkins University, 1999; M.A. 1996, Economics

B.S., Tulane University, *magna cum laude*, 1994, Economics.
Dean's Honor Scholar (full academic scholarship). Senior Scholar
Prize in Economics.

Current Position

ECONOMISTS INCORPORATED, Washington, D.C.: Principal
2014-present.

GEORGETOWN UNIVERSITY, MCDONOUGH SCHOOL OF
BUSINESS, Washington, D.C.: Adjunct Professor 2010, 2014, 2016.

GEORGE WASHINGTON UNIVERSITY, SCHOOL OF PUBLIC
POLICY, GEORGE WASHINGTON INSTITUTE FOR PUBLIC
POLICY, Washington, D.C.: Senior Fellow 2016-present.

Employment History

NAVIGANT ECONOMICS, Washington, D.C.: Managing Director,
2010-2013.

EMPIRIS, L.L.C., Washington, D.C.: Managing Partner and
President, 2008-2010.

CRITERION ECONOMICS, L.L.C., Washington, D.C.: President,
2004-2008. Senior Vice President, 1999-2004.

LECG, INC., Washington, D.C.: Senior Economist, 1998-99.

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U.S. SECURITIES AND EXCHANGE COMMISSION, OFFICE OF ECONOMIC ANALYSIS, Washington, D.C.: Staff Economist, 1997-98.

THE JOHNS HOPKINS UNIVERSITY, ECONOMICS DEPARTMENT, Baltimore: Teaching Assistant, 1996-98.

Authored Books and Book Chapters

THE NEED FOR SPEED: A NEW FRAMEWORK FOR TELECOMMUNICATIONS POLICY FOR THE 21ST CENTURY, co-authored with Robert Litan (Brookings Press 2013).

Net Neutrality Is Bad Broadband Regulation, co-authored with Robert Litan, in THE ECONOMISTS' VOICE 2.0: THE FINANCIAL CRISIS, HEALTH CARE REFORM AND MORE (Aaron Edlin and Joseph Stiglitz, eds., Columbia University Press 2012).

Valuing Life Settlements as a Real Option, co-authored with Joseph R. Mason, in LONGEVITY TRADING AND LIFE SETTLEMENTS (Vishaal Bhuyan ed., John Wiley & Sons 2009).

An Antitrust Analysis of the World Trade Organization's Decision in the U.S.-Mexico Arbitration on Telecommunications Services, co-authored with J. Gregory Sidak, in HANDBOOK OF TRANS-ATLANTIC ANTITRUST (Philip Marsden, ed. Edward Elgar 2006).

BROADBAND IN EUROPE: HOW BRUSSELS CAN WIRE THE INFORMATION SOCIETY, co-authored with Dan Maldoom, Richard Marsden and J. Gregory Sidak (Kluwer/Springer Press 2005).

Are Vertically Integrated DSL Providers Squeezing Unaffiliated ISPs (and Should We Care)?, co-authored with Robert W. Crandall, in ACCESS PRICING: THEORY, PRACTICE AND EMPIRICAL EVIDENCE (Justus Haucap and Ralf Dewenter eds., Elsevier Press 2005).

Journal Articles

HIGHLY CONFIDENTIAL UNDER PROTECTIVE ORDER

Paid Prioritization and Zero Rating: Why Antitrust Cannot Reach the Part of Net Neutrality Everyone Is Concerned About, ANTITRUST SOURCE (2017).

The Curious Absence of Economic Analysis at the Federal Communications Commission: An Agency in Search of a Mission, INTERNATIONAL JOURNAL OF COMMUNICATIONS (2017), co-authored with Gerald Faulhaber and Augustus Urschel.

On the Utility of Surrogates for Rule of Reason Cases, COMPETITION POLICY INTERNATIONAL (2015), co-authored with Kevin Caves.

Analyzing High-Tech Employee: The Dos and Don'ts of Proving (and Disproving) Classwide Antitrust Impact in Wage Suppression Cases, ANTITRUST SOURCE (2015), co-authored with Kevin Caves.

Econometric Tests for Analyzing Common Impact, 26 RESEARCH IN LAW AND ECONOMICS (2014), co-authored with Kevin Caves.

Life After Comcast: The Economist's Obligation to Decompose Damages Across Theories of Harm, ANTITRUST (Spring 2014), co-authored with Kevin Caves.

Is the U.S. Government's Internet Policy Broken?, 5 POLICY AND INTERNET (2013), co-authored with Robert Hahn.

Avoiding Rent-Seeking in Secondary Market Spectrum Transactions, 65 FEDERAL COMMUNICATIONS LAW JOURNAL (2013), co-authored with Jeffrey Eisenach.

Vertical Integration in Multichannel Television Markets: A Study of Regional Sports Networks, 12(1) REVIEW OF NETWORK ECONOMICS (2013), co-authored with Kevin Caves and Chris Holt.

Assessing Bundled and Share-Based Loyalty Rebates: Application to the Pharmaceutical Industry, 8(4) JOURNAL OF COMPETITION LAW AND ECONOMICS (2012), co-authored with Kevin Caves.

Lessons from Kahneman's Thinking Fast and Slow: Does Behavioral Economics Have a Role in Antitrust Analysis?, The ANTITRUST SOURCE (2012), co-authored with Andrew Card.

HIGHLY CONFIDENTIAL UNDER PROTECTIVE ORDER

Assessing Competition in U.S. Wireless Markets: Review of the FCC's Competition Reports, 64 FEDERAL COMMUNICATIONS LAW JOURNAL (2012), co-authored with Gerald Faulhaber and Robert Hahn.

An Empirical Analysis of Aftermarket Transactions by Hospitals, 28 JOURNAL OF CONTEMPORARY HEALTH LAW AND POLICY (2011), co-authored with Robert Litan and Anna Birkenbach.

Economic Evidence of Common Impact for Class Certification in Antitrust Cases: A Two-Step Analysis, ANTITRUST (Summer 2011).

Addressing the Next Wave of Internet Regulation: Toward a Workable Principle for Nondiscrimination, 4 REGULATION & GOVERNANCE (2010), co-authored with Robert Hahn and Robert Litan.

Class Certification in Antitrust Cases: An Economic Framework, 17 GEORGE MASON LAW REVIEW (2010), co-authored with Robert Kulick.

The Economic Impact of Eliminating Preemption of State Consumer Protection Laws, 12 UNIVERSITY OF PENNSYLVANIA JOURNAL OF BUSINESS LAW 781 (2010), co-authored with Joseph R. Mason and Robert B. Kulick.

Net Neutrality Is Bad Broadband Regulation, THE ECONOMISTS' VOICE, Sept. 2010, co-authored with Robert Litan.

Why the iPhone Won't Last Forever and What the Government Should Do to Promote its Successor, 8 JOURNAL ON TELECOMMUNICATIONS AND HIGH TECHNOLOGY LAW 313 (2010), co-authored with Robert W. Hahn.

What Does an Economist Have to Say About the Calculation of Reasonable Royalties?, 14 INTELLECTUAL PROPERTY LAW BULLETIN 7 (2010), co-authored with Kyle Smith.

Is Greater Price Transparency Needed in the Medical Device Industry?, HEALTH AFFAIRS (2008), co-authored with Robert W. Hahn and Keith Klovers.

HIGHLY CONFIDENTIAL UNDER PROTECTIVE ORDER

Evaluating Market Power with Two-Sided Demand and Preemptive Offers to Dissipate Monopoly Rent, 4 JOURNAL OF COMPETITION LAW & ECONOMICS (2008), co-authored with J. Gregory Sidak.

Assessing Bias in Patent Infringement Cases: A Review of International Trade Commission Decisions, 21 HARVARD JOURNAL OF LAW AND TECHNOLOGY (2008), co-authored with Robert W. Hahn.

The Effect of Incumbent Bidding in Set-Aside Auctions: An Analysis of Prices in the Closed and Open Segments of FCC Auction 35, 32 TELECOMMUNICATIONS POLICY JOURNAL (2008), co-authored with Peter Cramton and Allan Ingraham.

A Real-Option Approach to Valuing Life Settlement Transactions, 23 JOURNAL OF FINANCIAL TRANSFORMATION (2008), co-authored with Joseph R. Mason.

The Economics of Wireless Net Neutrality, 3 JOURNAL OF COMPETITION LAW AND ECONOMICS 399 (2007), co-authored with Robert W. Hahn and Robert E Litan.

Vertical Foreclosure in Video Programming Markets: Implication for Cable Operators, 3 REVIEW OF NETWORK ECONOMICS 348 (2007), co-authored with J. Gregory Sidak.

The Unintended Consequences of Net Neutrality, 5 JOURNAL ON TELECOMMUNICATIONS AND HIGH TECH LAW 533 (2007), co-authored with Robert E. Litan.

Does Video Delivered Over a Telephone Network Require a Cable Franchise?, 59 FEDERAL COMMUNICATIONS LAW JOURNAL 251 (2007), co-authored with Robert W. Crandall and J. Gregory Sidak.

The Competitive Effects of a Cable Television Operator's Refusal to Carry DSL Advertising, 2 JOURNAL OF COMPETITION LAW AND ECONOMICS 301 (2006).

Überregulation without Economics: The World Trade Organization's Decision in the U.S.-Mexico Arbitration on Telecommunications Services, 57 FEDERAL COMMUNICATIONS LAW JOURNAL 1 (2004), co-authored with J. Gregory Sidak.

The Secondary Market for Life Insurance Policies: Uncovering Life Insurance's "Hidden" Value, 6 MARQUETTE ELDER'S ADVISOR 95 (2004), co-authored with Neil A. Doherty and Brian A. O'Dea.

Do Unbundling Policies Discourage CLEC Facilities-Based Investment?, 4 TOPICS IN ECONOMIC ANALYSIS AND POLICY (2004), co-authored with Robert W. Crandall and Allan T. Ingraham.

Foreign Investment Restrictions as Industrial Policy, 3 CANADIAN JOURNAL OF LAW AND TECHNOLOGY 19 (2004), co-authored with Robert W. Crandall.

Regulating the Secondary Market for Life Insurance Policies, 21 JOURNAL OF INSURANCE REGULATION 63 (2003), co-authored with Neil A. Doherty.

Interim Pricing of Local Loop Unbundling in Ireland: Epilogue, 4 JOURNAL OF NETWORK INDUSTRIES 119 (2003), co-authored with J. Gregory Sidak.

The Benefits of a Secondary Market for Life Insurance, 38 REAL PROPERTY, PROBATE AND TRUST JOURNAL 449 (2003), co-authored with Neil A. Doherty.

The Empirical Case Against Asymmetric Regulation of Broadband Internet Access, 17 BERKELEY TECHNOLOGY LAW JOURNAL 954 (2002), co-authored with Robert W. Crandall and J. Gregory Sidak.

How Can Regulators Set Nonarbitrary Interim Rates? The Case of Local Loop Unbundling in Ireland, 3 JOURNAL OF NETWORK INDUSTRIES 273 (2002), co-authored with J. Gregory Sidak.

Vertical Foreclosure in Broadband Access, 49 JOURNAL OF INDUSTRIAL ECONOMICS (2001) 299, co-authored with Daniel L. Rubinfeld.

Open Access to Broadband Networks: A Case Study of the AOL/Time Warner Merger, 16 BERKELEY TECHNOLOGY LAW JOURNAL 640 (2001), co-authored with Daniel L. Rubinfeld.

Cable Modems and DSL: Broadband Internet Access for Residential Customers, 91 AMERICAN ECONOMICS ASSOCIATION

PAPERS AND PROCEEDINGS 302 (2001), co-authored with Jerry A. Hausman and J. Gregory Sidak.

Residential Demand for Broadband Telecommunications and Consumer Access to Unaffiliated Internet Content Providers, 18 YALE JOURNAL ON REGULATION 1 (2001), co-authored with Jerry A. Hausman and J. Gregory Sidak.

Determining the Source of Inter-License Synergies in Two-Way Paging Networks, 18 JOURNAL OF REGULATORY ECONOMICS 59 (2000).

A General Framework for Competitive Analysis in the Wireless Industry, 50 HASTINGS LAW REVIEW 1639 (2000), co-authored with J. Gregory Sidak and David Teece.

Capital Raising in Offshore Markets, 23 JOURNAL OF BUSINESS AND FINANCE 1181 (1999), co-authored with Ian Gray and Reena Aggarwal.

Expert Testimony Since 2012

The Ohio State University v. New Par D/B/A Verizon Wireless, Case No. 2:15-cv-2866 (S.D. Oh.).

Authenticom, Inc. v. CDK Global, LLL; and The Reynolds And Reynolds Company, Case No. 17-cv-318 (W.D. Wis.).

Manmohan Dhillon et al. v. Anheuser-Busch, LLC et al., Case No. 14CECG03039 MBS (Cal. Fresno).

In re Lidoderm Antitrust Litigation, MDL Dkt. No. 14-md-02521-WHO (N.D. Cal.).

Maxon Hyundai Mazda et al. v. Carfax Inc., Case No. CV 2680 (AJN) (RLE) (S.D.N.Y.).

Philip R. Loy and Sharon Loy v. Womble Carlyle Sandridge & Rice, et al., Case No. 2014-cv-254012 (Ga. Super.).

In re MyFord Touch Consumer Litigation, Case No. 13-cv-3072-EMC (N.D. Cal.).

Sun Life Assurance Company of Canada v. U.S. Bank National Association, Case No. NO. 2:14-cv-04703-SJF-GRB (E.D. N.Y.).

HIGHLY CONFIDENTIAL UNDER PROTECTIVE ORDER

Sun Life Assurance Company of Canada v. U.S. Bank National Association and Larry Bryan, Case No. 14-CIV-62610-BLOOM/VALLE (S.D. Fla.).

In the Matter of Flat Wireless, LLC, for and on behalf of its Operating Subsidiaries v. Cellco Partnership d/b/a Verizon Wireless, and its Operating Subsidiaries, File No. EB-15-MD-005 (Federal Communications Commission).

Omni Healthcare, et al. v. Health First Inc., et al., Case No. 6:13-CV-01509-RBD-DAB (M.D. Fla.).

Schuylkill Health System et al. v. Cardinal Health 200, LLC & Owens & Minor Distribution, Inc., Case No. 12-cv-07065-JS (E.D. Pa.).

Meda Pharmaceuticals Inc. v. Apotex, Inc and Apotex Corp., Case No. 01-14-0001-6315 (Am. Arbitration Ass'n).

Mark S. Wallach, et al. v. Eaton Corporation, et al., Case No. 10-260-SLR (D. Del.).

STB Ex Parte No. 722 Railroad Revenue Adequacy (Surface Transportation Board).

In the Matter of 2014 Quadrennial Regulatory Review – Review of the Commission’s Broadcast Ownership Rules and Other Rules Adopted Pursuant to Section 202 of the Telecommunications Act of 1996, MB Docket No. 14-50 (Federal Communications Commission).

Lindsay Kamakahi and Justine Levy, et al v. American Society for Reproductive Medicine and Society for Assisted Reproductive Technology, Case No.: 3:11-CV-1781 JCS (N.D. Cal.).

Salud Services, Inc., et al. v. Caterpillar, Inc., Case No.: 1:12-cv-23927 (S.D. Fla.).

Gnanh Nora Krouch v. Wal-Mart Stores, Inc., Case No. CV-12-2217 (N.D. Cal.).

In the Matter of Petition for Rulemaking to Eliminate the Sports Blackout Rule, MB Docket No. 12-3 (Federal Communications Commission).

HIGHLY CONFIDENTIAL UNDER PROTECTIVE ORDER

In the Matter of Review of Wholesale Services and Associated Policies, File No. 8663-C12-201313601 (Canadian Radio-Television and Telecommunications Commission).

Crafting a Successful Incentive Auction: Stakeholders' Perspectives (U.S. Senate, Committee on Commerce, Science, and Transportation).

Allergy Systems v. Enersys Delaware, Inc., Case No. 74-198-Y-001772-12 JMLE (American Arbitration Association).

In re New York City Bus Tour Antitrust Litigation, Master Case File No. 13-CV-0711 (S.D. N.Y.).

SOCAN Tariff 22.A (Online Music Services, 2011-2013), CSI Online Music Services (2011-2013), SODRAC Tariff 6 - Online Music Services, Music Videos (2010-2013) (Copyright Board Canada).

Imperial Premium Finance, LLC, v. Sun Life Assurance Company of Canada (S.D. Fla.).

The Satellite Television Law: Repeal, Reauthorize, or Revise? (U.S. House of Representatives, Committee on Energy and Commerce).

Marchbanks Truck Service, et al. v. Comdata Network Inc., et al., Civil Action No. 07-1078-JKG (E.D. Pa.).

Patricia Reiter v. Mutual Credit Corporation, et al., Case No. 8:09-cv-0081 AG (RNBx) (C.D. Cal.).

In re Photochromic Lens Antitrust Litigation, MDL Docket No. 2173 (M.D. Fla.).

In the Matter of the Arbitration Between Washington Nationals Baseball Club v. TCR Sports Broadcasting Holdings, L.L.P. (Major League Baseball Revenue Sharing Definitions Committee).

Miguel V. Pro and Davis Landscape et al. v. Hertz Equipment Rental Corporation, No. 2:06-CV-3830 (DMC) (D.N.J.).

Game Show Network, LLC v. Cablevision Systems Corp., File No. CSR-8529-P (Federal Communications Commission).

Apotex, Inc., v. Cephalon, Inc., Barr Laboratories, Inc., Mylan Laboratories, Inc., Teva Pharmaceutical Industries, Ltd., Teva

HIGHLY CONFIDENTIAL UNDER PROTECTIVE ORDER

Pharmaceuticals USA, Inc., Ranbaxy Laboratories, Ltd., and Ranbaxy Pharmaceuticals, Inc., Case No. 2:06-cv-02768-MSG (E.D. Pa.).

In Re Airline Baggage Fee Antitrust Litigation, Civil Action No. 1:09-Md-2089-Tcb (N.D. Ga.).

White Papers

The Empirical Link Between Fibre-to-the-Premises Deployment and Employment: A Case Study in Canada (prepared for Bell Canada), co-authored with Kevin Caves and Anna Koyfman (Dec. 10, 2015).

Good Intentions Gone Wrong: The Yet- To- Be- Recognized Costs of the Department Of Labor's Proposed Fiduciary Rule (prepared for Capital Group), co-authored with Robert Litan (July 2015).

Bringing Sanity Back to the Spectrum Debate: A Response to CCA's White Paper (prepared for Mobile Future), co-authored with Allan Ingraham (June 26, 2015).

Unlocking Patents: Costs of Failure, Benefits of Success (prepared for Patent Utility) (Feb. 4, 2015).

The Consumer Benefits of Efficient Mobile Number Portability Administration (prepared for Neustar) (Mar. 8, 2013).

Economic Analysis of the Implications of Implementing EPA's Tier 3 Rules (prepared for Emissions Control Technology Association), co-authored with George Schink (June 14, 2012).

Are Google's Search Results Unfair or Deceptive Under Section 5 of the FTC Act? (prepared for Google), co- authored with Robert Litan (May 1, 2012).

Bundles in the Pharmaceutical Industry: A Case Study of Pediatric Vaccines (prepared for Novartis), co-authored with Kevin Caves (July 13, 2011).

Are U.S. Wireless Markets Effectively Competitive? A Critique of the FCC's 14th and 15th Annual Wireless Competition Reports (prepared for AT&T), co-authored with Gerald R. Faulhaber, Robert W. Hahn (July 11, 2011).

Do Group Purchasing Organizations Achieve the Best Prices for Member Hospitals? An Empirical Analysis of Aftermarket

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Transactions (prepared for Medical Device Manufacturers Association), co-authored with Robert Litan (Oct. 6, 2010).

The Economic Impact of Broadband Investment (prepared for Broadband for America), co-authored with Robert Crandall (Feb. 23, 2010).

Why the iPhone Won't Last Forever and What the Government Should Do to Promote Its Successor (prepared for Mobile Future), co-authored with Robert Hahn (Sept. 21, 2009).

The Economic Impact of Eliminating Preemption of State Consumer Protection Laws (prepared for the American Bankers' Association), co-authored with Joseph R. Mason (Aug. 21, 2009).

Economic Effects of Tax Incentives for Broadband Infrastructure Deployment (prepared for the Fiber to the Home Council), co-authored with Jeffrey Eisenach and Jeffrey West (Dec. 23, 2008).

The Effect of Brokered Deposits and Asset Growth on the Likelihood of Failure (prepared for Morgan Stanley, Citigroup, and UBS), co-authored with Joseph Mason and Jeffrey West (Dec. 17, 2008).

Estimating the Benefits and Costs of M2Z's Proposal: Reply to Wilkie's *Spectrum Auctions Are Not a Panacea* (prepared for CTIA), co-authored with Robert W. Hahn, Allan T. Ingraham and J. Gregory Sidak (July 23, 2008).

Irrational Expectations: Can a Regulator Credibly Commit to Removing an Unbundling Obligation? AEI-Brookings Related Publication No. 07-28, co-authored with Jeffrey Eisenach (Dec. 30, 2007)

Is Greater Price Transparency Needed in The Medical Device Industry? (prepared for Advanced Medical Technology Association), co-authored with Robert W. Hahn (Nov. 30, 2007).

Should the FCC Depart from More than a Decade of Market-Oriented Spectrum Policy? Reply to Skrzypacz and Wilson (prepared for CTIA), co-authored with Gerald Faulhaber and Robert W. Hahn (Jun. 18, 2007).

Improving Public Safety Communications: An Analysis of Alternative Approaches (prepared for the Consumer Electronics

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Association and the High Tech DTV Coalition), co-authored with Peter Cramton, Thomas S. Dombrowsky, Jr., Jeffrey A. Eisenach, and Allan Ingraham (Feb. 6, 2007).

The Budgetary Impact of Eliminating the GPOs' Safe Harbor Exemption from the Anti-Kickback Statute of the Social Security Act (prepared for the Medical Device Manufacturers Association) (Dec. 20, 2005).

Reply to "The Life Settlements Market: An Actuarial Perspective on Consumer Economic Value" (prepared for Coventry First), co-authored with Eric Stallard (Nov. 15, 2005).

The Competitive Effects of Telephone Entry into Video Markets (prepared for the Internet Innovation Alliance), co-authored with Robert W. Crandall and J. Gregory Sidak (Nov. 9, 2005).

How Do Consumers and the Auto Industry Respond to Changes in Exhaust Emission and Fuel Economy Standards? A Critique of Burke, Abeles, and Chen (prepared for General Motors Corp.), co-authored with Robert W. Crandall and Allan T. Ingraham (Sept. 21, 2004).

Inter-City Competition for Retail Trade in North Texas: Can a TIF Generate Incremental Tax Receipts for the City of Dallas? (prepared for Harvest Partners), co-authored with Thomas G. Thibodeau and Allan T. Ingraham (July 16, 2004).

An Accurate Scorecard of the Telecommunications Act of 1996: Rejoinder to the Phoenix Center Study No. 7 (prepared for BellSouth), co-authored with Robert Crandall (Jan. 6, 2004).

Competition in Broadband Provision and Implications for Regulatory Policy (prepared for the Alcatel, British Telecom, Deutsche Telekom, Ericsson, France Telecom, Siemens, Telefónica de España, and Telecom Italia), co-authored with Dan Maldoom, Richard Marsden, and Gregory Sidak (Oct. 15, 2003).

The Effect of Ubiquitous Broadband Adoption on Investment, Jobs, and the U.S. Economy (prepared for Verizon), co-authored with Robert W. Crandall (Sept. 17, 2003).

The Deleterious Effect of Extending the Unbundling Regime on Telecommunications Investment (prepared for BellSouth), co-authored with Robert W. Crandall (July 10, 2003).

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Letter Concerning Spectrum Auction 35 to the Honorable Michael K. Powell, Chairman, Federal Communications Commission, from Peter C. Cramton, Robert W. Crandall, Robert W. Hahn, Robert G. Harris, Jerry A. Hausman, Thomas W. Hazlett, Douglas G. Lichtman, Paul W. MacAvoy, Paul R. Milgrom, Richard Schmalensee, J. Gregory Sidak, Hal J. Singer, Vernon L. Smith, William Taylor, and David J. Teece (Aug. 16, 2002).

Speaking Engagements

Antitrust and Telecommunications, ABA ANTITRUST IN THE AMERICAS, Mexico City, June 1, 2017.

Fundamentals—Economics, ABA SECTION OF ANTITRUST LAW SPRING MEETING, Washington, D.C., Mar. 29, 2017.

DOL Rule Analysis and FSR's SIMPLE PTE Explained, FINANCIAL SERVICES ROUNDTABLE, Washington, D.C., Aug. 6, 2015.

New Principles for a Progressive Broadband Policy, PROGRESSIVE POLICY INSTITUTE, Washington, D.C., Mar. 13, 2014.

The Open Internet: Where Do We Go From Here? PROGRESSIVE POLICY INSTITUTE, Washington, D.C., Jan. 29, 2014.

Does Platform Competition Render Common Carriage Irrelevant in an IP world? PROGRESSIVE POLICY INSTITUTE, Washington, D.C. Nov. 20, 2013.

The 41st Research Conference on Communication, Information and Internet Policy, TELECOMMUNICATIONS POLICY RESEARCH CONFERENCE, George Mason University School of Law, Arlington, VA, September 27, 2013.

The Broadband Technology Explosion: Rethinking Communications Policy for a Mobile Broadband World, Pepperdine School of Public Policy, Menlo Park, CA June 20, 2013.

Net Neutrality: Government Overreach or the Key to Innovation?, NORTHWESTERN JOURNAL OF TECHNOLOGY AND INTELLECTUAL PROPERTY EIGHTH ANNUAL SYMPOSIUM, Chicago, IL, Mar. 8, 2013.

Internet Everywhere: Broadband as a Catalyst for the Digital Economy, The Brookings Institution, Washington, D.C., Nov. 27, 2012.

Can Broadband Power an Economic Recovery?, Advanced Communications Law & Policy Institute at New York Law School, Washington, D.C., July 10, 2012.

Using Regression in Antitrust Cases, UNIVERSITY OF PENNSYLVANIA LAW SCHOOL, Philadelphia, PA, Apr. 12, 2012.

Mergers: The Road to Duopoly or Path to Competitive Panacea? NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS, Los Angeles, CA, July 20, 2011.

State of the Mobile Net, CONGRESSIONAL INTERNET CAUCUS, Washington, D.C., May 27, 2011.

Waves of Innovation: Spectrum Allocation in the Age of the Mobile Internet, INFORMATION TECHNOLOGY & INNOVATION FOUNDATION, Washington D.C., May 17, 2011.

With or Without Merit, Class Certification Requires Commonality, ABA SECTION OF ANTITRUST LAW 59TH ANNUAL SPRING MEETING, Washington, D.C., Mar. 30, 2011.

4th Annual Future of Private Antitrust Enforcement Conference, AMERICAN ANTITRUST INSTITUTE, Washington, D.C., Dec. 7, 2010.

Jobs and Technology, NEW DEMOCRATIC LEADERSHIP COUNCIL, Washington, D.C., Sept. 22, 2010.

Regulation and Broadband, ADVANCED COMMUNICATIONS LAW & POLICY INSTITUTE, NEW YORK LAW SCHOOL, New York, N.Y., July 14, 2010.

13th Annual Symposium on Antitrust, GEORGE MASON LAW REVIEW, Washington, D.C., Feb. 4, 2010.

Broadband Infrastructure and Net Neutrality, ADVISORY COMMITTEE TO THE CONGRESSIONAL INTERNET CAUCUS' STATE OF THE NET, Washington, D.C., Jan. 22, 2010.

HIGHLY CONFIDENTIAL UNDER PROTECTIVE ORDER

The Consequences of Net Neutrality Regulations, AMERICAN CONSUMER INSTITUTE CENTER FOR CITIZEN RESEARCH, Washington, D.C., Nov. 19, 2009.

Wireless Innovation Luncheon, MOBILE FUTURE, Washington, D.C., Nov. 3, 2009.

Second Life Settlements & Longevity Summit, INSURANCE-LINKED SECURITIES & LIFE SETTLEMENTS, New York, N.Y., Sept. 30, 2009.

Perspectives on Investment and a National Broadband Plan, AMERICAN CONSUMER INSTITUTE, Washington, D.C., Sept. 4, 2009.

Markets and Regulation: How Do We Best Serve Customers?, Wireless U. Communications Policy Seminar, UNIVERSITY OF FLORIDA PUBLIC UTILITY RESEARCH CENTER, Tampa, FL, Nov. 13, 2008.

The Price Of Medical Technology: Are We Getting What We Pay For? HEALTH AFFAIRS BRIEFING, Washington, D.C., Nov. 10, 2008.

Standard Setting and Patent Pools, LAW SEMINARS INTERNATIONAL, Arlington, VA., Oct. 3, 2008.

The Changing Structure of the Telecommunications Industry and the New Role of Regulation, INTERNATIONAL TELECOMMUNICATIONS SOCIETY BIENNIAL CONFERENCE, Montreal, Canada, June 26, 2008.

The Debate Over Network Management: An Economic Perspective, AMERICAN ENTERPRISE INSTITUTE CENTER FOR REGULATORY AND MARKET STUDIES, Washington, D.C., Apr. 2, 2008.

Merger Policy in High-Tech Industries, GEORGE MASON UNIVERSITY SCHOOL OF LAW, Washington, D.C., Feb. 1, 2008.

Telecommunications Symposium, U.S. DEPARTMENT OF JUSTICE ANTITRUST DIVISION, Washington, D.C., Nov. 29, 2007.

HIGHLY CONFIDENTIAL UNDER PROTECTIVE ORDER

Wireless Practice Luncheon, FEDERAL COMMUNICATIONS BAR ASSOCIATION, Washington, D.C., Nov. 29, 2007.

Association for Computing Machinery's Net Neutrality Symposium, GEORGE WASHINGTON UNIVERSITY, Washington, D.C., Nov. 12, 2007.

Regulators' AdvanceComm Summit, NEW YORK LAW SCHOOL, New York, N.Y., Oct. 14, 2007.

Annual Conference, CAPACITY USA 2007, New York, N.Y., Jun. 26, 2007.

William Pitt Debating Union, UNIVERSITY OF PITTSBURGH, SCHOOL OF ARTS & SCIENCES, Pittsburgh, PA., Feb. 23, 2007.

Annual Conference, WIRELESS COMMUNICATIONS ASSOCIATION INTERNATIONAL, Washington, D.C., June 27, 2006.

Annual Conference, MEDICAL DEVICE MANUFACTURERS ASSOCIATION, Washington, D.C., June 14, 2006.

Annual Conference, ASSOCIATION FOR ADVANCED LIFE UNDERWRITING, Washington, D.C., May 1, 2006.

Entrepreneur Lecture Series, LAFAYETTE COLLEGE, Easton, PA., Nov. 14, 2005.

Editorials and Magazine Articles

The Future of Net Neutrality: What Will the Court Decide, FOREIGN AFFAIRS, Mar. 16, 2016, co-authored with Robert Litan.

Obama's Big Ideas for Small Saves: 'Robo' Financial Advice, WALL STREET JOURNAL, July 21, 2015, co-authored with Robert Litan.

How the FCC Will Wreck the Internet, WALL STREET JOURNAL, May 28, 2015

The FCC's Incentive Auction: Getting Spectrum Right, PROGRESSIVE POLICY INSTITUTE PAPER, Nov. 2013.

HIGHLY CONFIDENTIAL UNDER PROTECTIVE ORDER

Clash of the Titans: How the Largest Commercial Websites Got That Way, MILKEN INSTITUTE REVIEW, Second Quarter 2013, co-authored with Robert Hahn.

Wireless Competition: An Update, GEORGETOWN CENTER FOR BUSINESS AND PUBLIC POLICY ECONOMIC POLICY VIGNETTES, May 3, 2012, co-authored with Robert Hahn.

Book Review of Tim Wu's The Master Switch, MILKEN INSTITUTE REVIEW, January 2012.

The AT&T/T-Mobile Deal: Should We Fear Wireless Consolidation? FORBES, June 3, 2011.

In FCC's Report on Wireless Competition, an Agenda?, HARVARD BUSINESS REVIEW, Apr. 15, 2011, co-authored with Gerald Faulhaber.

Will the Proposed Banking Settlement Have Unintended Consequences? HARVARD BUSINESS REVIEW, Mar. 29, 2010, co-authored with Joseph R. Mason.

Should Regulators Block AT&T's Acquisition of T-Mobile?, HARVARD BUSINESS REVIEW, Mar. 22, 2010.

The Black Hole in America's Retirement Savings, FORBES, Dec. 21, 2010, co-authored with Robert Litan.

Broken Compensation Structures and Health Care Costs, HARVARD BUSINESS REVIEW, Oct. 6, 2010, co-authored with Robert Litan.

Why Net Neutrality Is Bad for Business, HARVARD BUSINESS REVIEW, Aug. 13, 2010, co-authored with Robert Litan.

Why the iPhone Won't Last Forever and What the Government Should (or Shouldn't) Do to Promote Its Successor, MILKEN INSTITUTE REVIEW (First Quarter 2010), co-authored with Robert W. Hahn.

Streamlining Consumer Financial Protection, THE HILL, Oct. 13, 2009, co-authored with Joseph R. Mason.

Foxes in the Henhouse: FCC Regulation through Merger Review, MILKEN INSTITUTE REVIEW (First Quarter 2008), co-authored with J. Gregory Sidak.

HIGHLY CONFIDENTIAL UNDER PROTECTIVE ORDER

Don't Drink the CAFE Kool-Aid, WALL STREET JOURNAL, Sept. 6, 2007, at A17, co-authored with Robert W. Crandall.

The Knee-Jerk Reaction: Misunderstanding the XM/Sirius Merger, WASHINGTON TIMES, Aug. 24, 2007, at A19, co-authored with J. Gregory Sidak.

Net Neutrality: A Radical Form of Non-Discrimination, REGULATION, Summer 2007.

Telecom Time Warp, WALL STREET JOURNAL, July 11, 2007, at A15, co-authored with Robert W. Crandall.

Earmarked Airwaves, WASHINGTON POST, June 27, 2007, at A19, co-authored with Robert W. Hahn.

Not Neutrality, NATIONAL POST, Mar. 29, 2007, at FP19.

Should ATM Fees Be Regulated?, NATIONAL POST, Mar. 8, 2007, at FP17, co-authored with Robert W. Crandall.

Life Support for ISPs, REGULATION, Fall 2005, co-authored with Robert W. Crandall.

No Two-Tier Telecommunications, NATIONAL POST, Mar. 7, 2003, at FP15, co-authored with Robert W. Crandall.

Memberships

American Economics Association

American Bar Association Section of Antitrust Law

Reviewer

Journal of Risk and Insurance

Journal of Competition Law and Economics

Journal of Risk Management and Insurance Review

Journal of Regulatory Economics

Managerial and Decision Economics

Telecommunications Policy

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APPENDIX 2: METHODOLOGY AND DATA

292. I relied on eight datasets to estimate the bout and identity class damages. Five of these datasets: (1) Zuffa bout compensation data; (2) Zuffa identity compensation data; (3) Zuffa contract data; (4) profit and loss data for Zuffa events; and (5) pre-acquisition Strikeforce event and compensation data—were derived from discovery documents. The other three datasets came from public sources: (6) the Fighter performance FightMetric data was purchased from the vendor directly; (7) Fighter rankings and the universe of Fighter-event matchups came from FightMatrix, and (8) the Sherdog website.

A. Datasets

1. Zuffa's Bout Compensation Data

293. Bates numbered documents ZFL-0000003, ZFL-2603701, and ZFL-2764800 are spreadsheets containing Fighter-event pairs for all Zuffa produced events from February 2001 (UFC 30) to July 2017 (UFC 214: CORMIER vs JONES). These spreadsheets, when combined, form the complete universe of all Zuffa Fighter-event pairs over that time period. In addition to event and matchup information, the data also detail the show, win, LOA, PPV, and discretionary bonus payments made to each Fighter in each event (for example, Fight of the Night, Submission of the Night, and Knockout of the Night). Not counting non-events and events with no FightMetric data (discussed below), this dataset contains 8,505 Fighter-event pairs spanning 415 events and 1,503 Fighters. The Fighter-event pairs form the basis for my regression dataset.

2. Zuffa's Identity Compensation Data

294. Zuffa produced ZFL-2679053 and ZFL-2764813 at Plaintiffs' request, which are line-item accounting databases used by Zuffa to track payments, including payments to fighters; it is internally referred to as the "JD Edwards Database." I analyzed the payment data and flagged all payments relating to the identity class (sponsorship payments, video-game payments, merchandise royalties, and athlete outfitting policy payments). I supplement this data with ZFL-0000650, a "Merchandise Royalty Accrual database," which tracks royalty revenues accrued to specific Fighters for the sale of merchandise. If total royalty accruals are greater than merchandise payments in the JD Edwards Database during the Class Period, I use royalty revenues accrued from the Merchandise Royalty Accrual database instead for that Fighter's Merchandise payments during the Class Period.

3. Zuffa's Contract Data

295. Zuffa produced 44,526 separate Bates-numbered documents containing 51,020 individual Fighter-related documents. These documents included Promotional and Ancillary Rights Agreements (PARs), Bout Agreements, Letters, Amendments, Ratifications, Merchandise Agreements, other miscellaneous contracts, and some non-contract documents. Many of these documents were unsigned drafts. My team of researchers reviewed all 51,020 documents in this production. They cataloged the type of the document, and, in the case of PARs, additionally catalogued the contents of these contracts. For each PAR, my team recorded the date, Fighter

name, promoter name, whether or not the document was signed by both parties, and various terms of the agreement. In addition to recording the term of the agreement in months and bouts, we also noted (where applicable) the terms of the Right to Match Period, the Exclusive Negotiation Period, the Champion's Clause, tolling periods, and any Option Periods. The researchers recorded how the language of the ancillary rights clauses, promotion clauses, exclusion clauses, Champion's clause, tolling clauses, right to match clauses, commercial identification clauses, and breach of suspension clauses changed over time. From this exercise, my team and I ultimately created a dataset containing the terms of all valid and complete PAR agreements signed by both Zuffa and the Fighter. This dataset contained 2,136 valid contracts in total, from May 2001 to November 2015.⁶⁴⁰

296. I match this contract data to the Fighter-event observations from the Zuffa compensation data by the Fighter's name and the date of the observation. I assign an active PAR to a Fighter-event observation if the observation occurs during the active contract period of the PAR. This active contract period is determined by taking the PAR signing date as the beginning date, and assigning it an end date determined by (1) the contract's term length in months (including the lead-up time from signing to a Fighter's first bout, as determined by empirical observation); and (2) the option period (if any) specified in the contract.

297. I make further allowances for early contract renewals and contract tolling. First, if a Fighter signs a new PAR while an old PAR is active, the new PAR takes precedence over the old. Second, as tolling data on contracts was not comprehensively available, I and my team take steps to match Fighter-event pairings that occur outside of any active contract. This happens in 123 observations before November 2015, the cut-off date for the contract data. If Fighter-event pairings occur with no matching PAR, and if that fight does not exceed the maximum number of bouts specified in the most recent contract, it is assumed that the PAR was extended via one of the PARs many tolling provisions. For 177 observations that occur after November 2015, we apply the Fighter's most recent contract to the observation.

298. Overall, I and my team are able to match 78 percent of Zuffa's Fighter-event pairs from the compensation data to a PAR from 2001-2015, when the contract data ends, and 71 percent overall. (Contracts signed in 2015 may still be active in 2017, but no new contracts are observed, leading to a lower share of matched pairs.) I have no reason to believe the sample of contracts provided were biased in any material way with regards to their terms relative to the true contract population.

640. I exclude two contracts from non-Zuffa promoters, one from Invicta and one from EliteXC, that Zuffa included in the document production.

TABLE A1: CONTRACT CLAUSE PRESENCE

	Count	Percent
Count of Valid PARs	2,136	100%
Has Term in Months	2,134	100%
Has Term in Bouts	2,136	100%
Has Promotion Clause	2,136	100%
Has Exclusion Clause	2,136	100%
Has Ancillary Identity Clause	2,135	100%
Has Right to Match (RTM) Period	2,136	100%
Has Tolling Injury Clause	2,136	100%
Has Tolling Retirement Clause	2,132	100%
Has Term Start from First Bout	2,046	96%
Has Champions Clause	2,008	94%
Has Exclusive Negotiation Period	1,420	66%
Has Option Period	227	11%

Source: Zuffa's Contracts and Zuffa's Compensation Data

4. Zuffa's Event Profit and Loss Data

299. Zuffa provided two event-level profit-and-loss documents from which I gather event-specific revenues, costs, and compensation paid to Fighters. ZFL-2764797 details the event-level revenues and costs for all numbered (Pay-Per-View) UFC event from 2006 to 2016. ZFL-2764798 details the same revenues and costs for all events from 2010 to 2016. This second document includes Strikeforce, WEC, and non-PPV events (such as the shows on FOX, FX, and FUEL). This means that there is a data gap from 2006 to 2010 of non-PPV Zuffa events. To address this gap, I supplement this data with event-specific profit and loss documents produced in discovery.⁶⁴¹ Each of these profit-and-loss statements reports the total direct and indirect costs and revenues generated from the event. The revenues are sorted into various categories, broadly classified as Ticket Sales or Site Fees; PPV, Broadcast Sales, and Fees (including "Web Buys" and "Other"); event-specific Merchandise; and event-specific Sponsorships.

5. Pre-Acquisition Strikeforce Data

300. Within the discovery documents, I identified a number of files that contained data on Strikeforce's operations before its acquisition by Zuffa. These assorted datasets, once cleaned and combined, provide a partially complete picture of Strikeforce's event revenues and Fighter compensation before its acquisition. These documents are SJS00084771, ZFL-2458186, and ZFL-1472338. These sources add complete 400 Fighter-event level observations to the regression dataset. I omit "Young Guns" Strikeforce events from my analysis, as these were amateur events with purses less than \$1,000.

641. EG: ZUF-00031995, ZUF-00034210, ZUF-00106849, ZUF-00106856, and ZUF-00106854.

6. FightMetric Fighter Performance Data

301. To control for a Fighter's characteristics at the time of a fight, I procured detailed statistics on a Fighter's bout performance from FightMetric. This sports statistics firm, the "official statistics provider of the UFC,"⁶⁴² generates Fighter-bout level information such as the number of strikes attempted or landed, where they hit and the degree of power, the time spent in the various MMA positions (stalking, clinch, ground control), and other relevant metrics. These data are matched onto the bout compensation data by Fighter name and event.

302. The FightMetric data contains fight data for a select number of MMA firms. These include Affliction, Bellator, EliteXC, Pride Fighting Championships, Strikeforce, World Extreme Cagefighting, and the UFC. FightMetric founder and director Rami Genauer explained over email FightMetric's selection criteria for promoters:

It was basically an attempt to cover the...most prominent organizations in the world. That was UFC and PRIDE, then WEC, then Strikeforce. In recent years, it's become whoever the market is willing to pay for. That's meant covering Bellator at times, but not currently. There are also instances in the database of following a fighter's career, regardless of organization. That was more important in the early days of the company when the stars were what mattered. Now it's the UFC brand that matters the most.⁶⁴³

7. FightMatrix Data

303. FightMatrix is an independent MMA ranking website that uses "a computerized rating system that attempts to capture un-biased "popular thought" and combine it with prediction-based analysis."⁶⁴⁴ Zuffa personnel relied on FightMatrix statistics during depositions.⁶⁴⁵ I pulled FightMatrix's historical rankings for all time periods and divisions, assembling a database showing all of the site's rankings in three-month intervals since 1990, ending in January 2017. FightMatrix tracks rankings by weight class, with different maximum ranks tracked. For example, the Men's Heavyweight division tracks Fighters up to the 250th best Fighter, whereas the Men's Welterweight division tracks Fighters up to the 650th best Fighter.⁶⁴⁶

8. Sherdog Data

304. Sherdog.com is a major MMA news and fan site, cited by industry analysts as "the most popular source of MMA news and information."⁶⁴⁷ In addition to its news services, Sherdog

642. See <http://www.fightmetric.com/company>. Note that UFC displays the FightMetric statistics on their website, and a branded "Statistics Provided by FightMetric" logo appears on pages such as <http://www.ufc.com/fighter/Ronda-Rousey>

643. E-mail from Remi Genauer, Director, FightMetric, to Augustus Urschel, Analyst, Economists Incorporated (November 19, 2016, 19:48 ET).

644. See <http://www.fightmatrix.com/faq/>

645. Deposition of Javier Vasquez, Feb. 14, 2017 at 67, Exhibits 42-44.

646. See <http://www.fightmatrix.com/historical-mma-rankings/generated-historical-rankings/?Issue=109&Division=4> and <http://www.fightmatrix.com/historical-mma-rankings/generated-historical-rankings/?Issue=109&Division=1>

647. ZFL-2463304 at 14.

maintains a nearly complete record of every MMA fight from around the world, from UFC mega events in Las Vegas to eight-man untelevised garage fights in Bosnia and Herzegovina.⁶⁴⁸ These records give the dates and locations of the fights, who fought in them, and the outcome of the individual bouts. I obtained the entire catalog of fights and events from Sherdog's public website and assembled a dataset of every MMA fight from around the world. The dataset contains 280,471 worldwide bouts of two Fighters from 36,864 unique Live MMA Events spanning from December 1991 to June 2017.

305. In addition to event and bout data, the website assigns a unique Fighter ID to each MMA combatant in the known MMA universe. For example, the number "2383" in the URL www.sherdog.com/fighter/Nate-Quarry-2383 corresponds to Nate Quarry and no other Fighter, which can be tested by typing in <http://www.sherdog.com/fighter/2383>. Because names can vary across different datasets (and, in the case of some Zuffa data, within a dataset), I use this unique Fighter ID to link Fighters across the various datasets described here.

B. Foreclosure Share Methodology

306. Zuffa's foreclosure share of the market is defined as the percentage of foreclosed Zuffa Fighters over the total population pool of the Relevant Input Market in a given month at time t , illustrated below. I calculate one measure of foreclosure under which all Fighters are considered foreclosed; in the alternative, I classify a Fighter as foreclosed only if the duration of exclusivity for their contract is 30 months or more. The foreclosure statistic can be written:

$$\left(\frac{\text{Foreclosed Zuffa Fighter}}{\text{Relevant Input Market Fighter Pool}} \right)_t$$

307. Due to missing contracts for some Zuffa Fighters, I construct this statistic by multiplying Zuffa's internal foreclosure share by Zuffa's market share of the Relevant Input Market Fighter Pool at time t . For example, Zuffa may have 150 Fighters in a pool of 200 total Fighters in the Relevant Input Market at time t , but contract data is only available for 120 of those 150 Zuffa Fighters. In this case, I would take the internal foreclosure share of the Zuffa Fighters for which we have contract data. If 96 of those 120 Fighters were foreclosed, Zuffa would have an internal foreclosure share of 80 percent. I would then multiply that 80 percent by Zuffa's market share at time t , in this case 75 percent (equal to 150 Zuffa Fighters divided by 200 total Fighters in the Relevant Input Market Fighter Pool) for a total foreclosure share of 60 percent.

308. The Relevant Input Market Fighter Pool consists of all Fighters in the Relevant Input Market at a Live MMA Event occurring at time t . I consider a Fighter to be in the Relevant Input Market Fighter Pool if he or she participated in a Live MMA Event within nine or twelve months before or after the Live MMA Event in question. This allows me to capture the pool of Fighters that were active around the time of a Live MMA Event, and thus potentially could have participated in it (even if they actually participated in some other Live MMA Event within the window). I consider a nine-month window as my baseline specification. By definition, Fighters not

648. See <http://www.sherdog.com/events> and <http://www.sherdog.com/organizations/Mix-Fight-Night-Bosnia-and-Herzegovina-11979>

fighting in events during this window were inactive (did not fight in any Live MMA Event) for a period of 18 months surrounding the event in question. (My analysis of data from Sherdog reveals that the median career length for an MMA Fighter is brief—approximately five bouts, spread over just 41 months, which means that the typical length of time between bouts for a Fighter is about 8 months).

309. In some specifications, Fighters are weighted by the average gate and PPV revenues per Fighter for their respective promoters. Using the MMA news source <http://mmapayout.com>, I construct a database of 254 Live MMA Events and their total revenues.⁶⁴⁹ This includes event revenues for the promoters Affliction, Bellator, EliteXC, Pride, Strikeforce, UFC, WEC, and WSOF. I match these event revenues into the Sherdog data of all of the Fighter bouts that took place in that event. I then take the average revenue generated by each Fighter by dividing the total revenue by the number of Fighters. One average is calculated for Zuffa, and another for non-Zuffa promoters. Zuffa Fighters are then weighted by Zuffa's average revenue per Fighter, while non-Zuffa Fighters receive the average revenue per Fighter for non-Zuffa promoters. This approach is conservative because revenue data are available only for (relatively) large non-Zuffa MMA promotions such as Bellator and Strikeforce, so that Fighters from smaller promotions (which lack such data) receive the same weight as if they were affiliated with a larger promotion. In the case of ONE Championship, I conservatively assigned Fighters a weight equal to 25 percent of Zuffa Fighters' weight, in light of evidence that ONE's valuation was reportedly "approaching" a valuation of \$1B at approximately the same point in time that Zuffa sold for \$4B.⁶⁵⁰

C. Bout Class Regression Dataset Methodology

310. Given the various datasets described above, I create a combined regression dataset at the Fighter-event observation level. Each observation is a Zuffa (or Strikeforce pre-acquisition) Fighter in a given event matchup. Each observation contains the Fighter's name, their opponent, the event and its details, the Fighter's compensation and bonuses (from the Compensation Data), the events revenues and costs (from Zuffa's Event Profit and Loss Data), the Fighter's performance in that event (from the FightMetric data), the market foreclosure shares in that month (see section B above), the PAR agreement terms a Fighter was subject to at the time of the event (from the Contract Data). Combined, these datasets provide the independent and dependent variables necessary to estimate the regression.

311. With the exception of the contract, FightMatrix, and foreclosure share data, all of these datasets were merged in by Fighter IDs, a generated event ID, and the event date. Because the PAR agreements span multiple fights over time, I generate a timeframe over which each PAR agreement is active. This is the signing date plus the combined effective term. Because this is a theoretical date range, in the case of any overlapping agreements, I take the most recently signed

649. I use <http://mmapayout.com/blue-book/pay-per-view/> for PPV revenues and <http://mmapayout.com/blue-book/live-gate-attendance/> for gate revenues. Note: Although Strikeforce and Bellator have both produced internal financial data, I used publicly available data to construct Fighter weights to ensure event-specific comparability across promoters.

650. James Goyder, "ONE Championship receives multimillion dollar investment from Singapore fund," MMA Mania (July 14, 2016) ("[T]he company is on course for a billion-dollar valuation...The UFC was sold for \$4 billion to a group led by WME-IMG and ONE Championship is on course for an IPO in the next 12 to 18 months.").

contract. The foreclosure share data and FightMatrix ranking data were merged in on matching months.

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APPENDIX 3: MATERIALS RELIED UPON

Deposition of Denitza Batchvarova (January 25, 2017)

Deposition of Ike Lawrence Epstein (December 12, 2016)

Deposition of Jon Fitch (February 15, 2017)

Deposition of Kirk Hendrick (November 30, 2016)

Deposition of Kyle Kingsbury (February 17, 2017)

Deposition of Jeremy Lappen (February 28, 2017)

Deposition of Michael Mersch (July 14, 2017)

Deposition of Michael Mossholder (December 1, 2016)

Deposition of Kurt Otto (February 6, 2017)

Deposition of Sean Shelby (April 12, 2017)

Deposition of Javier Vasquez (February 14, 2017)

Deposition of Brandon Vera (February 6, 2017)

Deposition of Marshall Zelaznik (February 8, 2017)

Deposition of Lorenzo Fertitta (March 23, 2017)

Deposition of Jeffrey Aronson (April 25, 2017)

Deposition of Dana White (August 9, 2017)

Deposition of Joseph Silva (June 7, 2017)

Deposition of Scott Coker (August 3, 2017)

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FILED UNDER SEAL

LITERATURE

PHILLIP E. AREEDA, EINER ELHAUGE & HERBERT HOVENKAMP, 10 ANTITRUST LAW: AN ANALYSIS OF ANTITRUST PRINCIPLES AND THEIR APPLICATION 267, 325–28, ¶ 1758b. (1996 & Supp. 2003)

PHILLIP AREEDA, LOUIS KAPLOW & AARON EDLIN, ANTITRUST ANALYSIS: PROBLEMS, TEXT AND CASES ¶ 344 (6th ed. 2004).

Leandro Arozamena & Federico Weinschelbaum, *A note on the suboptimality of right-of-first-refusal clauses*, 4(24) Economics Bulletin (2006) 1-5

Johnathan Baker, *Beyond Schumpeter vs. Arrow: How Antitrust Fosters Innovation*, 74 Antitrust L.J. 575-602, 577 (2007)

Jesse Baker & Matthew Thomson, *The Ultimate Fighting Championships (UFC): The Evolution of a Sport*, in Cases in Marketing Management 115 (Kenneth E. Clow & Donald Baack, eds. 2012)

Jonathan B. Baker & Timothy F. Bresnahan, *Economic Evidence in Antitrust: Defining Markets and Measuring Market Power*, in Paulo Buccirossi, ed., HANDBOOK OF ANTITRUST ECONOMICS (2007)

Sushil Bikhchandani, Steven Lippman, & Reade Ryan, *On the Right of First Refusal* 5(1) Advances in Theoretical Econ. (2005)

Emily Breza, Supreet Kaur, & Yogita Shamdasani, *The Morale Effects Of Pay Inequality*, QUARTERLY J. ECON. (forthcoming 2017)

DENNIS CARLTON & JEFFREY PERLOFF, MODERN INDUSTRIAL ORGANIZATION (Pearson 2005 4th ed.)

Kevin Caves, Chris Holt & Hal Singer, *Vertical Integration in Multichannel Television Markets: A Study of Regional Sports Networks*, Rev. Network Econ. (2013)

Kevin Caves & Hal Singer, *Analyzing High-Tech Employee: The Dos and Don'ts of Proving (and Disproving) Classwide Antitrust Impact in Wage Suppression Cases*, " Antitrust Source (2015).

Kevin Caves & Hal Singer, *Assessing Bundled and Share-Based Loyalty Rebates: Application to the Pharmaceutical Industry*, J. Competition L. & Econ. (2012)

Trevor Collier, Andrew Johnson & John Ruggiero, *Aggression in Mixed Martial Arts: An Analysis of the Likelihood of Winning a Decision*, in 4 Violence and Aggression in Sporting Contests, Sports Economics, Management and Policy Series, 97-109, 98 (Springer 2011)

Eric Cramer & Daniel Berger, *The Superiority of Direct Proof of Monopoly Power and Anticompetitive Effects in Antitrust Cases Involving Delayed Entry of Generic Drugs* 39 UNIVERSITY OF SAN FRANCISCO L. REV. (2004)

HIGHLY CONFIDENTIAL UNDER PROTECTIVE ORDER

FILED UNDER SEAL

Aaron S. Edlin & Daniel L. Rubinfeld, *Exclusive or Efficient Pricing? The Big Deal Bundling of Academic Journals*, 72 Antitrust L.J. 119, 126 (2004)

Mohamed El-Hodiri & James Quirk, *An Economic Model of a Professional Sports League*, 79 J. POL. ECON. 1302 (1971)

Einer Elhauge, *Defining Better Monopolization Standards*, 56 Stan. L.R. 253 (2003)

RODNEY D. FORT, *SPORTS ECONOMICS* 267 (Prentice Hall 3rd ed. 2011)

Paul Gift, *Performance Evaluation and Favoritism: Evidence from Mixed Martial Arts*, Pepperdine University Working Paper (2014)

HERBERT HOVENKAMP, XI ANTITRUST LAW ¶1821, at 152, 160, 164-65 (1998)

HERBERT HOVENKAMP, *FEDERAL ANTITRUST POLICY* 82-83 (3d ed. 2005)

Brad R. Humphreys, *Alternative Measures of Competitive Balance in Sports Leagues*, J. Sports Econ. 133-148 (2002)

Jeremiah Douglas Johnson, *Predicting Outcomes Of Mixed Martial Arts Fights With Novel Fight Variables*, Thesis Submitted to the Graduate Faculty of the University of Georgia in Partial Fulfillment of the Requirements for the Degree Master Of Science (2012), available at https://getd.libs.uga.edu/pdfs/johnson_jeremiah_d_201208_ms.pdf

Marcel Kahan, Shmuel Leshem & Rangarajan Sundaram, *On First-Purchase Rights: Rights of First Refusal and Rights of First Offer*, 14 AMERICAN L. & ECON. REV. (2012).

MICHAEL KATZ & HARVEY ROSEN, *MICROECONOMICS* 264-65, 276-77 (Irwin McGraw-Hill 3rd ed. 1998)

MICHAEL LEEDS, PETER VON ALLMEN & VICTOR MATHESON, *THE ECONOMICS OF SPORTS* (Routledge 5th ed. 2016)

GEORGE MILKOVICH, JERRY NEWMAN, & BARRY GERHART, *COMPENSATION* 69 (10th ed. McGraw-Hill 2011)

Richard McGowan and John Mahon, *Demand for the Ultimate Fighting Championship: An Econometric Analysis of PPV Buy Rates* 6(6) Journal of Business and Economics 1032-1056 (2015)

Roger Noll, *Buyer Power and Economic Policy*, 72 ANTITRUST L.J. 615-616 (2005).

Roger Noll, *The Economics of Baseball Contraction*, 4 J. SPORTS ECON. 383 (2003)

Roger G. Noll, *Professional Basketball: Economic and Business Perspectives*, in THE BUSINESS OF PROFESSIONAL SPORTS 18 (Paul D. Staudohar & James A. Mangan eds., 1991)

JAMES QUIRK & RODNEY D. FORT, *HARD BALL: THE ABUSE OF POWER IN PRO TEAM SPORTS* 9 (Princeton University Press 1999).

JAMES QUIRK & RODNEY D. FORT, *PAY DIRT: THE BUSINESS OF PROFESSIONAL TEAM SPORTS* 240 (Princeton University Press 1992).

ROY RUFFIN & PAUL GREGORY, *PRINCIPLES OF MICROECONOMICS* 331-336 (Harper Collins 5th ed. 1993)

Simon Rottenberg, *The Baseball Players' Labor Market*, 64(3) J. Pol. Econ. 242-258 (1956)

Steven C. Salop, *The Raising Rivals' Cost Foreclosure Paradigm, Conditional Pricing Practices and the Flawed Incremental Price-Cost Test*, 81(2) ANTITRUST L.J. 371-421, 376 (2017)

Ilya Segal & Michael Whinston, *Naked Exclusion*: Comment 90(1) Am. Econ. Rev. 296-309 (2000)

Daniel Sutter & Stephen Winkler, *NCAA Scholarship Limits and Competitive Balance in College Football*, 3 J. SPORTS ECON. 16 (2003)

JEFFREY WOOLDRIDGE, *INTRODUCTORY ECONOMETRICS: A MODERN APPROACH* 210-212 (Thompson 4th ed. 2009)

TRIAL MATERIALS/BATES DOCUMENTS

CG-UFC-00000005

DB-ZUFFA-00006389

DB-ZUFFA—00006712

[REDACTED]

DB-ZUFFA-00007249

DB-ZUFFA-00007249 - DB-ZUFFA-00007289.pdf

DB-ZUFFA-00008846

DB-ZUFFA-00020303

DB-ZUFFA-00030406

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DB-ZUFFA-00056900

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HIGHLY CONFIDENTIAL UNDER PROTECTIVE ORDER

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HIGHLY CONFIDENTIAL UNDER PROTECTIVE ORDER

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HIGHLY CONFIDENTIAL UNDER PROTECTIVE ORDER

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HIGHLY CONFIDENTIAL UNDER PROTECTIVE ORDER

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-217-

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HIGHLY CONFIDENTIAL UNDER PROTECTIVE ORDER

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-218-

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HIGHLY CONFIDENTIAL UNDER PROTECTIVE ORDER

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ZUF-00088100
ZUF-00090606
ZUF-00096950
ZUF-00106610
ZUF-00106849
ZUF-00106854
ZUF-00106856
ZUF-00109551
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ZUF-00377706
ZUF-00395941
ZUF-00401766-779

HIGHLY CONFIDENTIAL UNDER PROTECTIVE ORDER

FILED UNDER SEAL

ZUF-00418378
ZUF-00421380-97
ZUF00447547
ZUF-00447778

Declaration of Rodney D. Fort Submitted to the Federal Trade Commission on Behalf of Zuffa, LLC (December 1, 2011), ZFL-1212308

Declaration of Andrew R. Dick, Ph.D., Submitted to the Federal Trade Commission on Behalf of Zuffa, LLC (December 1, 2011), ZFL-1212452

United States District Court District of Nevada, *Cung Le, et al. v. Zuffa, LLC, d/b/a Ultimate Fighting Championship and UFC*, 2:15-cv-01045-RFB-(PAL), Consolidated and Amended Antitrust Class Action Complaint (Dec. 18, 2015)

Declaration of Scott Coker in Support of Nonparty Bellator Sport Worldwide, LLC's Motion to Quash or Modify Subpoenas, Feb. 22, 2017, ¶20

E-mail from Remi Genauer, Director, FightMetic, to Augustus Urschel, Analyst, Economists Incorporated (November 19, 2016, 19:48 ET)

Goldman 30(b)(6)

Order Granting Plaintiffs' Supplemental Motion for Class Certification, High-Tech Employee Antitrust Litig., No. 11-CV-02509 (N.D. Cal. Oct. 24, 2013), at 60-61

ZF Meritor, LLC v. Eaton Corp., 696 F.3d 254, 277 (3d Cir. 2012)

Zuffa's Response to Plaintiffs' Requests for Admission No. 37

PUBLICLY AVAILABLE MATERIALS

Shaun Al-Shatti, *ONE Championship's Victor Cui: 'We've gotten a lot of interest' since UFC-Reebok deal*, MMA Fighting, May 21, 2015.

Shaun Al-Shatti, *Where in the world has Ben Askren been? Well, it's complicated...* MMA FIGHTING (April 28, 2017)

Mookie Alexander, *Six takeaways from Floyd Mayweather vs. Conor McGregor*, Bloody Elbow, Aug. 27, 2017

Zach Arnold, *PRIDE office in Tokyo shut down, all workers fired*, FIGHT OPINION, Oct. 4, 2007, available at <http://www.fightopinion.com/2007/10/04/pride-office-in-tokyo-shut-down-all-workers-fired/>

HIGHLY CONFIDENTIAL UNDER PROTECTIVE ORDER

FILED UNDER SEAL

Nick Baldwin, *CEO Victor Cui explains why Conor McGregor isn't suitable for ONE Championship*, BLOODY ELBOW, May 22, 2017, available at <http://www.bloodyelbow.com/2017/5/22/15677574/ceo-victor-cui-explains-why-conor-mcgregor-isnt-suitable-for-one-championship-mma-ufc-news>

Andrew Brennan, *Professional Wrestlers Must Realize They Can't Enter The MMA Or The UFC; It's Not A Scripted Fight*, Forbes, Oct. 31, 2016

John Cholish: '90% Including Some Top Tier Fighters' Unhappy With UFC Pay, Full Contact Fighter (Friday, May 31, 2013), available at <http://fcfighter.com/post/john-cholish-says-90-including-some-top-tier-fighters-unhappy-with-ufc-pay>

Department of Justice and Federal Trade Commission, *Antitrust Guidelines for Collaborations Among Competitors* (April 2000), §2.2, available at https://www.ftc.gov/sites/default/files/documents/public_events/joint-venture-hearings-antitrust-guidelines-collaboration-among-competitors/ftcdojguidelines-2.pdf

James Edwards, *ONE Championship and UFC is the story of East and West in the MMA market*, Independent, April 19, 2016

Ethan Finkelstein, *WSOF New PPV Model to Award 50 Percent to Fighters*, FANSIDED, Sept. 23, 2014

Jason Gay, *Mayweather and McGregor's Mindless Summer Fight*, Wall Street Journal, June 15, 2017

James Goyder, "ONE Championship receives multimillion dollar investment from Singapore fund," MMA Mania (July 14, 2016)

Josh Gross, *Cuban sees bright future for MMA*, ESPN, (September 13, 2007), available at <http://www.espn.com/extra/mma/news/story?id=3017701>

Josh Gross, *Lappen Sues WFA for Breach of Contract*, SHERDOG, Dec. 7, 2006, available at <http://www.sherdog.com/news/articles/Lappen-Sues-WFA-for-Breach-of-Contract-6308>

Jesse Holland, *Lorenzo Fertitta: UFC will generate record-high \$600 million revenue for 2015*, MMA MANIA, Dec. 28, 2015, available at <http://www.mmamania.com/2015/12/28/10675158/lorenzo-fertitta-ufc-will-generate-record-high-600-million-revenue-2015-mma>

Kevin Iole, *In cutting Jake Shields, UFC takes a page out of NFL's playbook*, YAHOO SPORTS, Apr. 7, 2014, available at <https://sports.yahoo.com/news/in-cutting-jake-shields--ufc-takes-a-page-out-of-nfl-s-playbook-203152661-mma.html>

Steve Juon, *Former WSOF dual-weight champion David Branch re-signs with UFC*, MMA Mania, Feb. 15, 2017

Steve Juon, *Justin Gaethje tests free agency, but WSOF still holds matching rights*, MMA MANIA, Mar. 30, 2017

Riley Kontek, *4 Reasons MMA Fans Should Pay Attention to One FC*, Bleacher Report, May 30, 2013

Richard Mann, "Ranking Points for Highest Ranked Fighter by Promotion" FightMatrix (August 3, 2016).

Matthew Miller, *Ultimate Cash Machine*, FORBES, April 17, 2008, available at <https://www.forbes.com/forbes/2008/0505/080.html>

Strikeforce confirms Jan. 12 event is final Showtime broadcast, MMA JUNKIE, Dec. 20, 2012, available at <https://web.archive.org/web/20131102021751/http://www.mmajunkie.com/news/2012/12/strikeforce-confirms-jan-12-event-is-final-showtime-broadcast>

Two-division WSOF champ David Branch relinquishes titles, heads to free agency, MMA JUNKIE, Feb. 6, 2017

UFC Acquires World Fighting Alliance, Inc., MMA JUNKIE, Dec. 11, 2016, available at <http://mmajunkie.com/2006/12/ufc-acquires-world-fighting-alliance-inc>

UFC 91 replay on Spike TV peaks with 3.3 million viewers, MMAmania.com, Jan. 27, 2009, available at <https://www.mmamania.com/2009/01/27/ufc-91-replay-on-spike-tv-peek-with-33-million-viewers>

Done deal: UFC owners purchase PRIDE FC, MMA MANIA, Mar. 27, 2007, available at <http://www.mmamania.com/2007/03/27/done-deal-ufc-owners-purchase-pride-fc>

Tony Mogan, *ONE Championship: Asia's MMA powerhouse plays up its differences to UFC in battle for supremacy*, INTERNATIONAL BUSINESS TIMES, Jan. 21, 2017

Pat Miletich's Statement in UFC-IFL Case, MMAWEEKLY, June 17, 2006, available at <http://www.mmaweekly.com/pat-miletichs-statement-in-ufc-ifl-case>

Moody's Investors Service, "Announcement: Moody's Changed Zuffa LLC's (d/b/a Ultimate Fighting Championship or UFC) Rating Outlook to Positive from Stable," (December 1, 2010), available at https://www.moody's.com/research/Moodys-Changed-Zuffa-LLCs-dba-Ultimate-Fighting-Championship-or-UFC--PR_210184

John Morgan, *Dana White stands by 'pay for rankings' claim, says UFC is the NFL of MMA*, MMA JUNKIE, June 14, 2010, available at <http://mmajunkie.com/2010/06/dana-white-stands-by-pay-for-rankings-claim-says-ufc-is-the-nfl-of-mixed-martial-arts>

John Morgan, *Justin Gaethje on new UFC deal: "Now I get a chance to prove I'm the best in the world."* MMA Junkie, May 5, 2017

John Nash, *Why do boxers make more than MMA fighters?*, BLOODY ELBOW, Aug. 23, 2016

Tom Ngo, *IFL: Going, Going...Gone! UFC Here We Come?*, 5TH ROUND, July 25, 2008, available at <https://web.archive.org/web/20091201045527/http://www.5thround.com/07252008/news/1293/ifl-going-goinggone/>

Patriot Software, *Payroll Blog: Payroll Training, Tips, and News*, available at: <https://www.patriotsoftware.com/payroll/training/blog/what-is-internal-equity/>

Ken Pishna & Ivan Trembow, *UFC Buying World Extreme Cagefighting*, MMA WEEKLY, Dec. 11, 2006, available at <https://web.archive.org/web/20070929111019/http://www.mmaweekly.com/absolutenm/templates/dailynews.asp?articleid=3053&zoneid=13>

Darren Rovell & Brett Okamoto, *Dana White on \$4 billion UFC sale: 'Sport is going to the next level*, ESPN, July 11, 2016, available at: http://www.espn.com/mma/story/_/id/16970360/ufc-sold-unprecedented-4-billion-dana-white-confirms

Chris Smith, *UFC Vs. WWE: How Much More Is Real Fighting Worth?*, FORBES, July 12, 2016

Jonathan Snowden, *Disastrous debut costs IFL millions: The history of MMA on television, Part 2*, BLEACHER REPORT, Dec. 12, 2012, available at <http://bleacherreport.com/articles/1442316-disastrous-debut-costs-ifl-millions-the-history-of-mma-on-television-part-2>

Robert J. Szczerba, *Mixed Martial Arts and the Evolution of John McCain*, FORBES, Apr. 3, 2014, available at <http://www.forbes.com/sites/robertszczerba/2014/04/03/mixed-martial-arts-and-the-evolution-of-john-mccain/#27d42ac91a3b>

Jeffrey Thaler, *Breaking Down the Match-Up: UFC vs. IFL*, SHERDOG, Mar. 2, 2006, available at <http://www.sherdog.com/news/articles/Breaking-Down-the-MatchUp-UFC-vs-IFL-4051>

UFC on Fuel TV 7 post-fight media scrum (Feb. 2013), available at <https://youtu.be/y0NTilTqn2w?t=12m9s>

UFC's "Weight Classes," available at <http://www.ufc.com/discover/sport/weight-classes>

Nate Wilcox, *More Details Emerge on UFC Acquisition of Strikeforce*, BLOODY ELBOW, Mar. 13, 2011, available at <http://www.bloodyelbow.com/2011/3/13/2047456/ufc-strikeforce-acquisition-more-details-emerge>

Michael Woods, *UFC struggles to shake outlaw nature*, ESPN, May 12, 2009, available at <http://www.espn.com/extra/mma/news/story?id=4157485>

<http://www.abcbboxing.com/committee-report-on-unified-rules-for-mma>

<http://bleacherreport.com/articles/2652376-bleacher-report-mma-rankings-for-july-2016>

<https://www.bloodyelbow.com/2017/6/25/15870964/spike-executive-bellator-nyc-the-first-of-many-ppv-events-running-mma-news>

<http://www.fightmatrix.com/faq/>

<http://www.fightmatrix.com/historical-mma-rankings/generated-historical-rankings/?Issue=109&Division=4>

<http://www.fightmatrix.com/mma-ranks/>

<http://www.mmafighting.com/2015/5/11/8581653/scott-coker-on-ufc-reebok-sponsorship-program-bellators-phones-been>

<http://mmajunkie.com/rankings>

<http://mmajunkie.com/2014/09/wanderlei-silva-lashes-out-at-ufc-in-video-announcing-retirement-from-mma>

<http://mmajunkie.com/2016/09/legacy-fc-and-rfa-merge-to-create-new-legacy-fighting-alliance-promotion>

<https://www.mmamania.com/2009/07/24/report-affliction-folds-will-now-sponsor-ufc>

<http://mmapayout.com/blue-book/live-gate-attendance/>

<http://www.mmaweekly.com/ufc-138-tv-ratings-match-past-tape-delays>

<https://onefc.com/livestream/>

<http://www.sherdog.com/events>

<http://www.sherdog.com/fighter/Steve-Bosse-22732>

<http://www.sherdog.com/fighter/Wes-Shivers-49521>

<http://www.sherdog.com/news/news/Strikeforce-Challengers-20-Draws-143000-Viewers-on-Showtime-37424>

<http://www.sherdog.com/organizations/Mix-Fight-Night-Bosnia-and-Herzegovina-11979>

<http://www.sherdog.com/organizations/World-Extreme-Cagefighting-48>

<https://twitter.com/heynottheface/status/884511218207084544>

<http://www.ufc.com/discover/sport/rules-and-regulations#2>

<http://www.ufc.com/discover/sport/ways-to-win>

<https://www.ufc.tv/category/fightlibrary>

<https://usatoday30.usatoday.com/sports/mma/post/2011-10-26/viacom-buys-bellator-plans-2013-start-on-spike/558003/1>

<https://web.archive.org/web/20091201045527/http://www.5thround.com/07252008/news/1293/ifl-going-goinggone/>

<https://web.archive.org/web/20091109023530/http://mmajunkie.com/news/16763/strikeforce-to-be-flagship-promotion-in-ea-sports-mma-videogame.mma>